

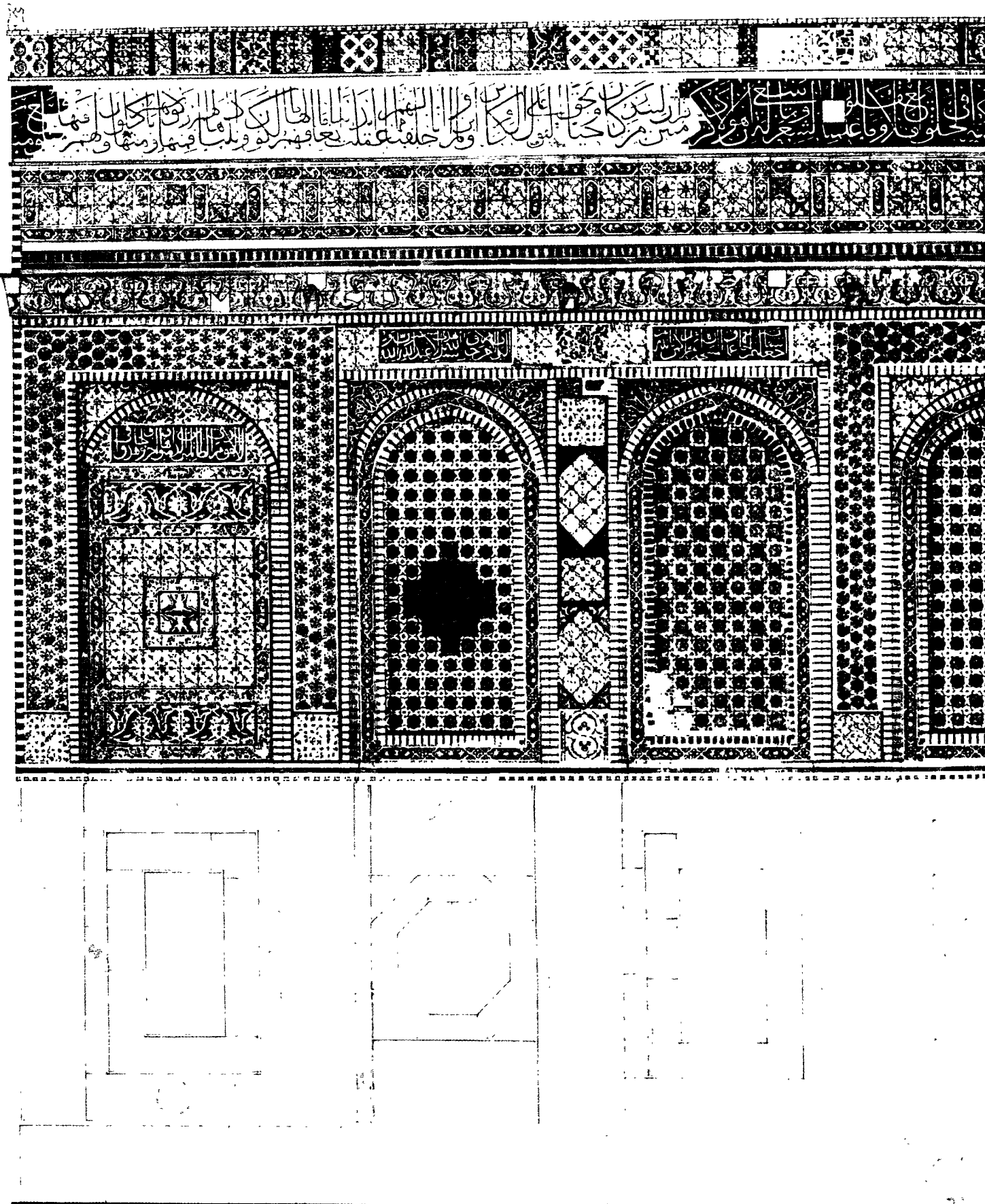
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THE
DOME OF THE ROCK
IN JERUSALEM



North-East face of Octagon. Three Bays showing present condition

1911

WINTER OF 1911

IN



THE DOME OF THE ROCK IN JERUSALEM

A Description of its Structure & Decoration

by

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PREFACE

IN the course of its long history of more than twelve centuries, many descriptions have been written of the Dome of the Rock, both by European and by Oriental writers. In the description of Syria and Palestine written by Mukaddasi, he says that what he wrote is not borrowed from the writings of others but describes what he witnessed with his own eyes. In the following pages the example of Mukaddasi has been followed. The aim has been to record the state of this famous shrine at an important moment of history, when Jerusalem, after an interval of more than eight hundred years, is once again occupied by European Forces.

I take this opportunity of gratefully acknowledging the courtesy of the American Colony in Jerusalem for permitting the use of the photographs reproduced in Figs. 3, 4, 6, 7, 8, 9, 14, 15; also the valuable help given by Mr. George Shiber of Jerusalem in the preparation of the drawings, by Mr. William Harvey in checking my measurements with measured drawings of his own and in verifying geometrical conclusions, and by Mr. Ohanessian, a ceramic artist in Jerusalem, in criticizing the detailed analysis of the tile decoration and in making useful suggestions.

Preface

Lastly, I desire to record my deep indebtedness to my friend the late Mufti of Jerusalem, Muhammad Kamil Effendi al Husaini, without whose sympathetic co-operation and keen interest in the beautiful shrine committed to his charge, it would have been impossible to prepare this book.

The publication of this book has been facilitated by the generosity, which is here gratefully acknowledged, of the Palestine Administration, of the Right Honourable Sir Herbert Samuel, P.C., of the Protectorate of Zanzibar, of the India Office, and of the Protectorate of Nigeria.

E. T. R.

DITCHLING, *October* 1923.

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INTRODUCTION

THE following pages contain the results of a somewhat detailed examination made during the autumn and winter of 1918. It may be of interest, in the first place, to state the circumstances that made this examination possible.

The Allies, under the command of General Sir Edmund Allenby, K.C.B., occupied Jerusalem on the 9th December 1917. In the following spring, the Military Governor of Jerusalem, Brigadier-General Storrs, C.M.G., C.B.E., invited the writer to report on the Dome of the Rock with a view to providing a basis for carrying out, as soon as conditions might permit, the works of preservation that had long been needed.

An exact knowledge of the actual condition of the structure and its decoration was clearly the first need. Fortunately an interim Government, with the cordial co-operation of the traditionary guardians of the shrine, gave an opportunity, which may not occur again, for acquiring some of the knowledge needed by allowing the writer to live for several months in the presence of the Dome of the Rock.

It is not claimed that an exhaustive study has been made; nor has such a study been attempted. The object has been rather to limit the task to describing the present

Dome of the Rock

condition of the building and to suggesting the nature of the work needed, as well as the means for carrying it out; recalling, at the same time, something of the building's history—not in detail or with any completeness, but only so far as might be necessary to account for the present condition or to discover how, in the past, the problems of repair have been met. For the repair of this building has never been an easy matter; and the more the building is examined, the clearer it becomes that the same reasons that make maintenance difficult to-day have also made it difficult in the past.

An inscription in the interior of the building states that it was built in the year A.H. 72 (A.D. 691). It has been said that the object of its founder, the Umayyad Caliph—'Abd al Malik ibn Marwân (685–705), was to make Jerusalem a place of Islamic devotion instead of Mecca, then the seat of the rival Caliph 'Abdullah ibn Zubair. For this purpose it was necessary to construct as splendid a building as possible. Luckily, materials existed in the Byzantine churches of Jerusalem or their ruins; for the Persian invasion under Chosroes, in A.D. 614, twenty-three years before the Islamic conquest in 637, had destroyed most of the Christian buildings. There may also have been descendants of Byzantine craftsmen still living in the city; others came from abroad. Both the materials and the workers seem to have been, for the most part, in their origin, rather foreign than local.

Jerusalem, perched as it is in the Judæan hills, removed from the stream of life's usual business, is not situated favourably for the long maintenance of any workers capable of supplying the occasional and exceptional needs of so elaborately decorated a building. Consequently repair without foreign help has always been difficult, and it would seem that, just as the shrine was largely deco-

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rated with foreign materials and by foreign workers, so, for any serious work of repair, foreigners—Greeks, Armenians, or Persians—have always been imported and employed.

During more than twelve hundred years the building has been exposed to the destructive attacks of winter storms, of summer suns, of earthquakes, of fire, and of 'souvenir' seekers. Repairs have been many, but at distinct intervals; little or nothing being done between those intervals; for the workers had gone. But, in spite of the difficulties due to the elaborate nature of the work and to the lack, on the spot, of the kinds of materials and labour needed, attempts have been made by generation after generation to maintain the building in a manner worthy of its associations by means of such materials as could be found among the remains of the former Byzantine civilization or could be obtained from abroad. The degree of facility for getting materials and labour needed for the many works of repair carried out during the twelve centuries of the building's existence has, of course, varied with the varying political or other conditions that have governed the relationship of Jerusalem with other parts of the world. For instance, in the sixteenth century, perhaps earlier, it appears that it was either impossible to find any longer mosaic workers to repair the external mosaics, or that it was easier, owing to relations with Persia, to import Persian tile-makers and completely to change the outer covering of the building from one of mosaics to one of tiles. Many other changes have occurred. In the tenth century Mukaddasi describes the dome as covered with gilt plates; the present dome is covered with lead. At the end of the fifteenth century Mujîr-al-Dîn mentions the external mosaics already referred to. None of the window-openings contain the original windows. The parapet wall was pierced with arched openings; their shape and size can still be seen

Dome of the Rock

from the roof. The wings, containing small rooms on each side of the north and east porches, did not form part of the original intention; they are late additions, as is also the open portico on each side of the south porch. How the inner surface of the original dome was decorated is not known; the present dome is covered with moulded, gilt, and painted plaster work. Nor is there any evidence to show how the ceilings of the octagon were treated; the present ceilings are several centuries later and have been much repaired since their construction. None of the original floor remains, and its level has been altered. The bases of the columns are no longer visible; they are cased in marble boxes.

These changes give some, though not a complete, idea of the tendency for the building continually to adapt itself to new conditions. This tendency still continues, as it has continued for twelve centuries and more. And though, through this process of change and adaptation, much has been lost that might in other circumstances have been preserved—and though, to that extent, it is to be regretted—yet it may, on the other hand, be welcomed by many as an unmistakable sign of a determination to maintain the building, if not altogether in its original, at least in some, form—and as a proof of continued vitality in the ideas and beliefs that the building has, except for the short period of the Frank occupation, symbolized without interruption from the seventh century to the present day. For change has been a condition of the building's existence and of its continued power to represent those ideas. Had there been no change the building would have disappeared.

The Dome of the Rock is, then, alive—almost in the same sense that a man is alive. It changes its tissues and it renews its structure in order to maintain power to enshrine the soul that is in it. It is much more than a place of archaeological or 'artistic' interest. It is, of a living

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Faith, the living symbol, striving, by the strength of the Faith it represents, to survive in the face of many and great difficulties.

In the preservation of the Dome of the Rock all civilized humanity must be interested. In this connexion it may be worth while to add that, astonishing as it may seem, there are those who, for reasons best known to themselves, would wish to see the Dome of the Rock discredited in the eyes of the world and regarded as a building that has been so ill treated by time, so neglected by its guardians, as to have lost any value it may once have possessed: a building that might well be left to a natural and rapid decay, culminating in its early demolition and replacement by a worthier shrine built perhaps to the honour of some other Faith. This conclusion might be sound if the premisses upon which it is based were true. That they are not true, and that the building is worth every effort that can be made to preserve it, will be obvious to any who impartially examine it, and also, it is hoped, to any who read the following pages.

It will be noticed that a large proportion of the text and of the illustrations deals with the external tile decoration. The reason is that the tile decoration is in a worse condition than any other part of the building, and it has been thought desirable to make as complete a record as possible while there is yet an opportunity for so doing. For the same reason a good deal of space has been given to the inscriptions on the tiles.

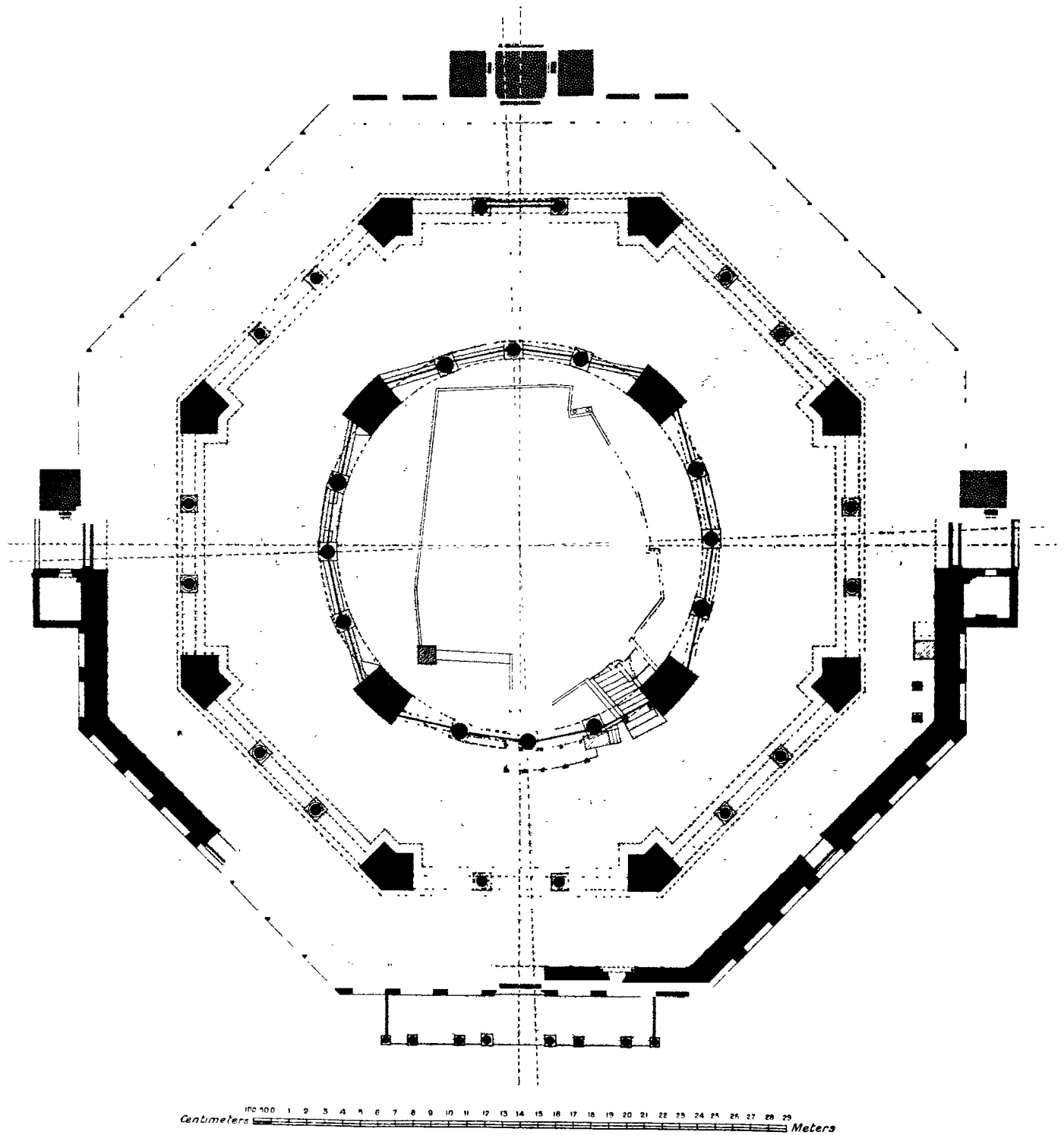


Fig. 1. Ground Plan of the Dome of the Rock.

I

THE CHARACTER AND CONDITION OF THE STRUCTURE

THE structure protecting the sacred Rock may, in a general manner, be described as consisting in a series of enclosures set one within the other (Figs. 1, 2). The innermost enclosure, immediately surrounding the Rock, is in the form of a cylinder of a height about equal to its diameter. This cylinder is covered by a dome, and its lower part is pierced with arches carried on piers and columns. Outside the cylinder are two successive octagonal enclosures of about half the height of the cylinder they surround. The first is in the form of an arched colonnade; and the second is a wall pierced with windows and with four entrances facing the cardinal points. The ceiling of the inner octagon is slightly higher than that of the outer octagon. The piers and columns that carry the cylindrical wall, and those belonging to the arcade between it and the outer wall, are disposed so as not to conceal one another, and so as to permit, from almost any position, a view right across the building (Figs. 3, 4, 6, 7). The columns are of coloured marbles with gilded capitals; the cylindrical wall and the arches of the intermediate colonnade are covered with mosaics forming conventional floral patterns of brown,

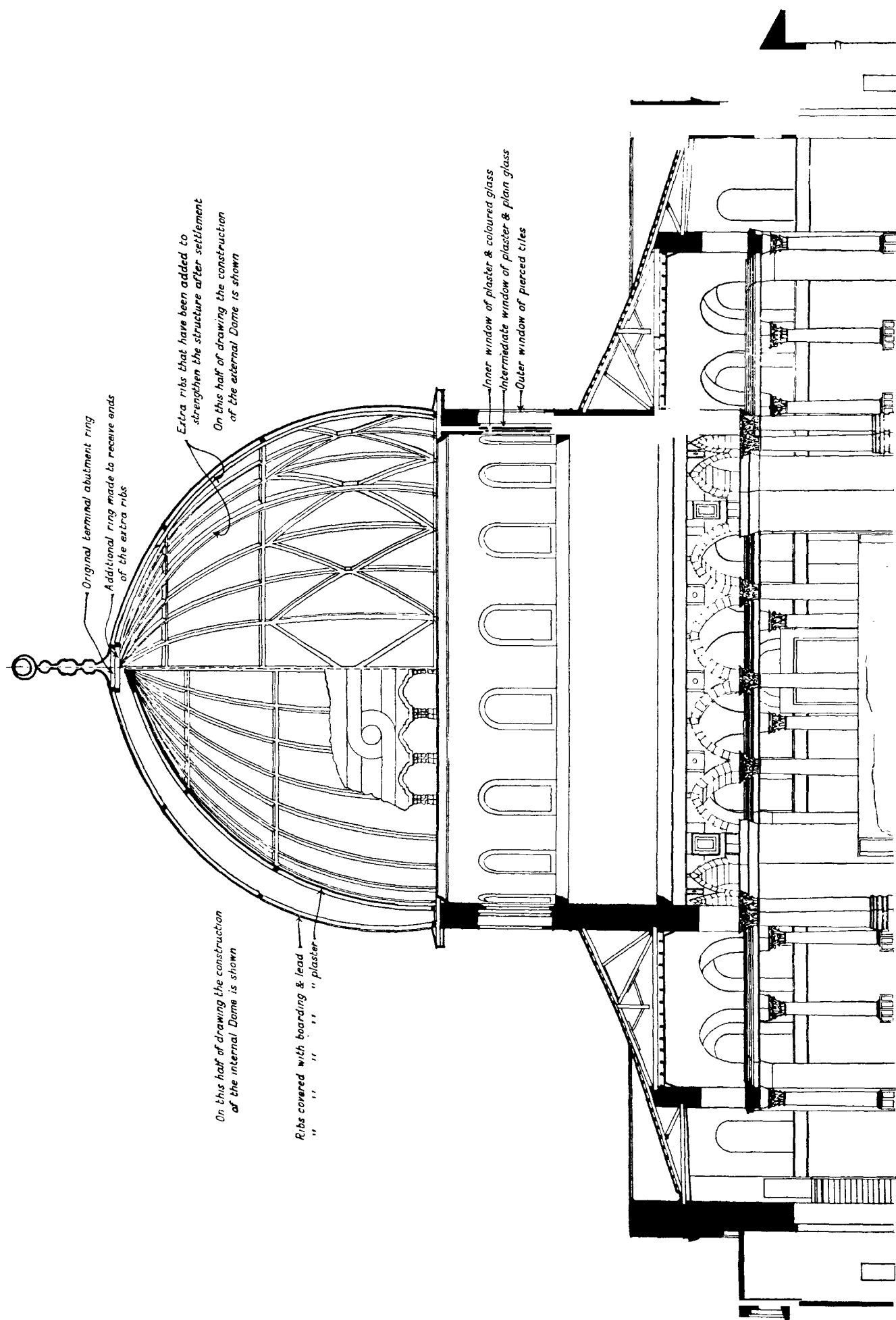


Fig.2. SECTION ON EAST & WEST AXIS



The Structure

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black, blue, and green, and mother-of-pearl, set upon a gold background; the dome (Figs. 8, 9) is decorated with painted and gilded arabesques and inscriptions; marble covers the walls of the outer octagon and of the piers; and the window-openings are filled with coloured glass. An astonishingly rich and varied effect of structure, of ornament, and of light is thus produced. Looking across the building from one side to the other, the great swell of the cylindrical wall or drum is seen through an arch in the foreground. The many columns that carry the drum, together with those that are seen beyond and to the right hand and to the left, with their arches and their lines of gilded cornice, produce a crowded complex of structural forms that gives, by contrast, an appearance of impressive spaciousness to the area enclosed by the drum and, consequently, of great size to the dome, although the dome is, in comparison with other famous domes, but of modest span. Externally also the dome dominates (Fig. 14). But here the relationship between the dome and the enclosing octagon and the value given by the one to the other, is not so obvious as internally; and, though the building is, outside, less impressive than inside, yet its surface decoration—the lower part in marble and the upper part in Persian tiles—must, at one time, have been hardly less brilliant than that of the interior.

For purposes of more detailed description it is convenient to divide the structure into its two main parts: the part which covers and encloses the Rock itself and the part which encloses the additional octagonal area already referred to.

The part covering the Rock is arranged on a circular plan. The circle is no larger than is necessary just to surround the Rock (Figs. 1, 15). On the circumference are set out the points of support for the drum from which the dome springs. These supports are of two kinds:

Dome of the Rock

masonry piers and marble columns. There are four piers and twelve columns, a series of three columns alternating with a pier. The piers are covered with marble. Each pier is about two metres thick, two metres and a half long on its inner face, and three metres long on its outer face; this difference is due to the jambs being built on lines that radiate from the centre of the circle. The diameter of the circle, measured from face to face of opposing piers, is 20.60 metres. The columns are not all of the same diameter—64, 65, 67, and 69 centimetres are the respective diameters of the middle columns of each series of three. Of the other columns, two are 75 centimetres in diameter and the remaining six are 74, 76, 78, 80, 83, and 85 respectively. Their capitals also vary considerably. Both columns and capitals belonged to former buildings. The combined height of base, shaft, and capital is equal to one-third of the diameter of the circle and the diameter of the circle is equal to the height from the floor to the top of the drum. The arches (Figs. 3, 4, 6, 7), covered with black and white marble slabs and connecting pier with column and column with column, are 1 metre and 11 centimetres wide. The imposts of these arches have jambs that radiate from the centre of the circular drum wall that they carry. This wall is of the same width as the arches. The inner face of this wall is flush with the inner face of the piers. The piers, being nearly twice as wide as the arches and the wall, are for about half their width carried up as buttresses to the drum wall and reappear as buttresses on the outside (Figs. 13, 14). At a short distance above the crowns of the arches the drum supports (Fig. 2), on its outer side, the timbers forming the roof over the area outside the central circular structure. This roof consists of King-Post trusses with their outer principal rafters prolonged till they meet the drum. The drum is carried uninter-

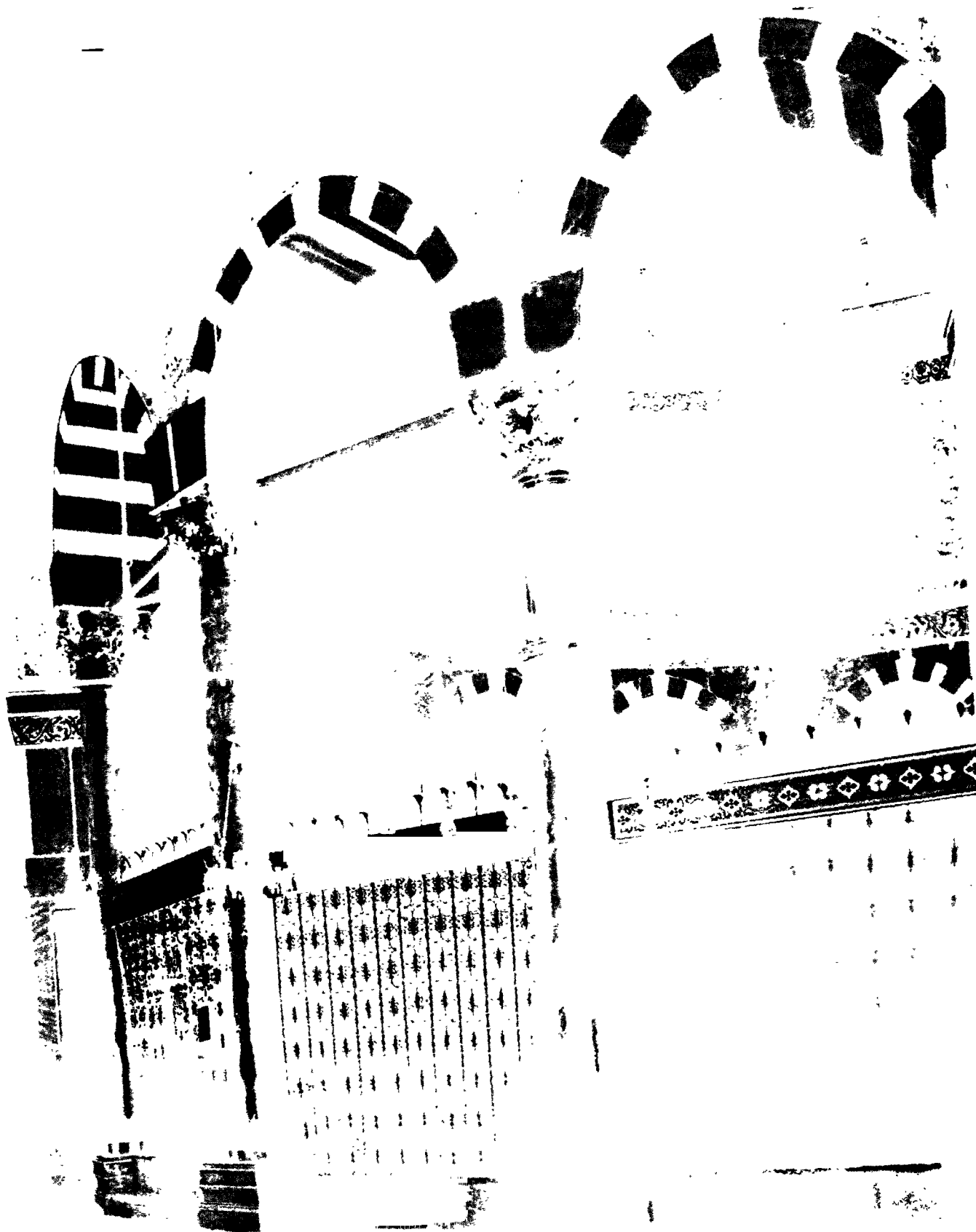


Fig. 3. A view of the columns and piers supporting the drum



Fig. 4. A view of the columns and piers carrying the drum and, in the distance, of the arched colonnade between the outer wall and the drum supports

The Structure

II

ruptedly up to a height a little above the level at which these rafters meet it. Above that level (Fig. 13) it is pierced with sixteen windows. These windows have semicircular heads. The springing line of the semicircular heads is at the level of the apex of an imaginary equilateral triangle,

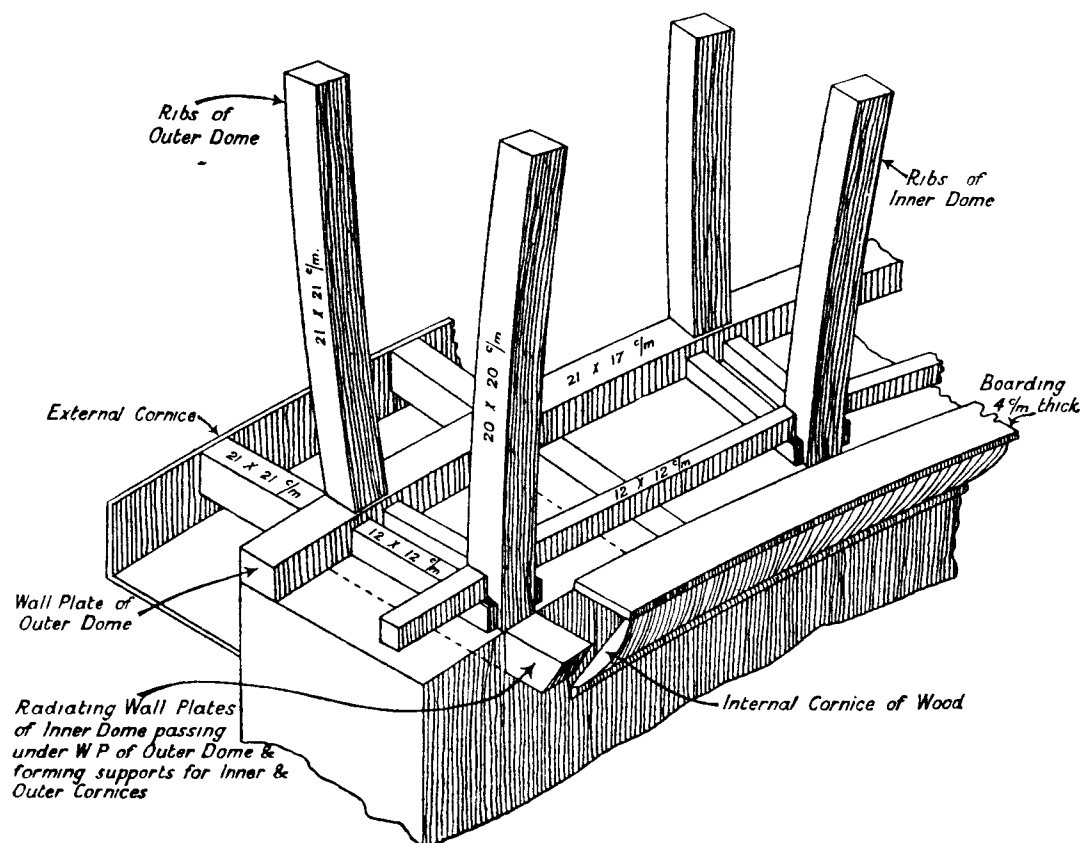


FIG. 5. The footing of the two domes upon the wall of the drum.

the sides of which equal the diameter of the drum, and the base of which is at pavement level. The distance from this springing line to the top of the Dome equals the distance from the springing line to the pavement. The drum is built of ashlar laid in courses about 50 centimetres high. It carries two timber domes, one inside the other (Fig. 2). These domes are constructed with converging ribs.

Dome of the Rock

The ribs (Figs. 2 and 5) of the outer dome are in section about 21 centimetres square and spring from a wall-plate, into which they are housed, 21 centimetres wide and 17 centimetres high. This wall-plate is laid on the outer edge of the drum wall and is composed of pieces scarfed together and forming a continuous circular chain. The ribs of the inner dome are in section from 18 to 20 centimetres square. Each rib springs from its own wall-plate laid transversely across the wall, radiating from the centre of the drum and passing under the wall-plate of the outer dome. These wall-plates are in section 21 centimetres square, and in length they measure a good deal more than the width of the wall they traverse, projecting beyond the face of the wall on the inside by about 35 centimetres and on the outside by 85 centimetres. On the inside their ends provide support for the stucco cornice that crowns the drum wall, and on the outside they carry the outer cornice which divides the drum from the dome. Between the wall-plate of the outer dome and the feet of the ribs of the inner dome are short straining timbers 12 centimetres square in section, two to each inner rib to which they are halved, and between each inner rib is a straining-piece of similar section. Each dome has thirty-two ribs. In the outer dome every eighth rib is doubled by having under it a second rib of the same size. The ribs of the outer dome meet at their summit round a circular plate; those of the inner dome no doubt meet in the same manner, though the ring is not visible, being covered with boarding. Each dome is built in three sections one above the other and divided from one another by two horizontal plates. The ribs of each section are curved like those of a wooden ship; they are not cut to the curve required but bent. Where serious shakes exist in the timbers iron bands are used to prevent the shakes from spreading. The timbers used are of oak, cedar, and pine of a kind locally known as



Fig. 6. The Sacred Rock with surrounding columns, and, beyond, the arches and columns of the intermediate colonnade

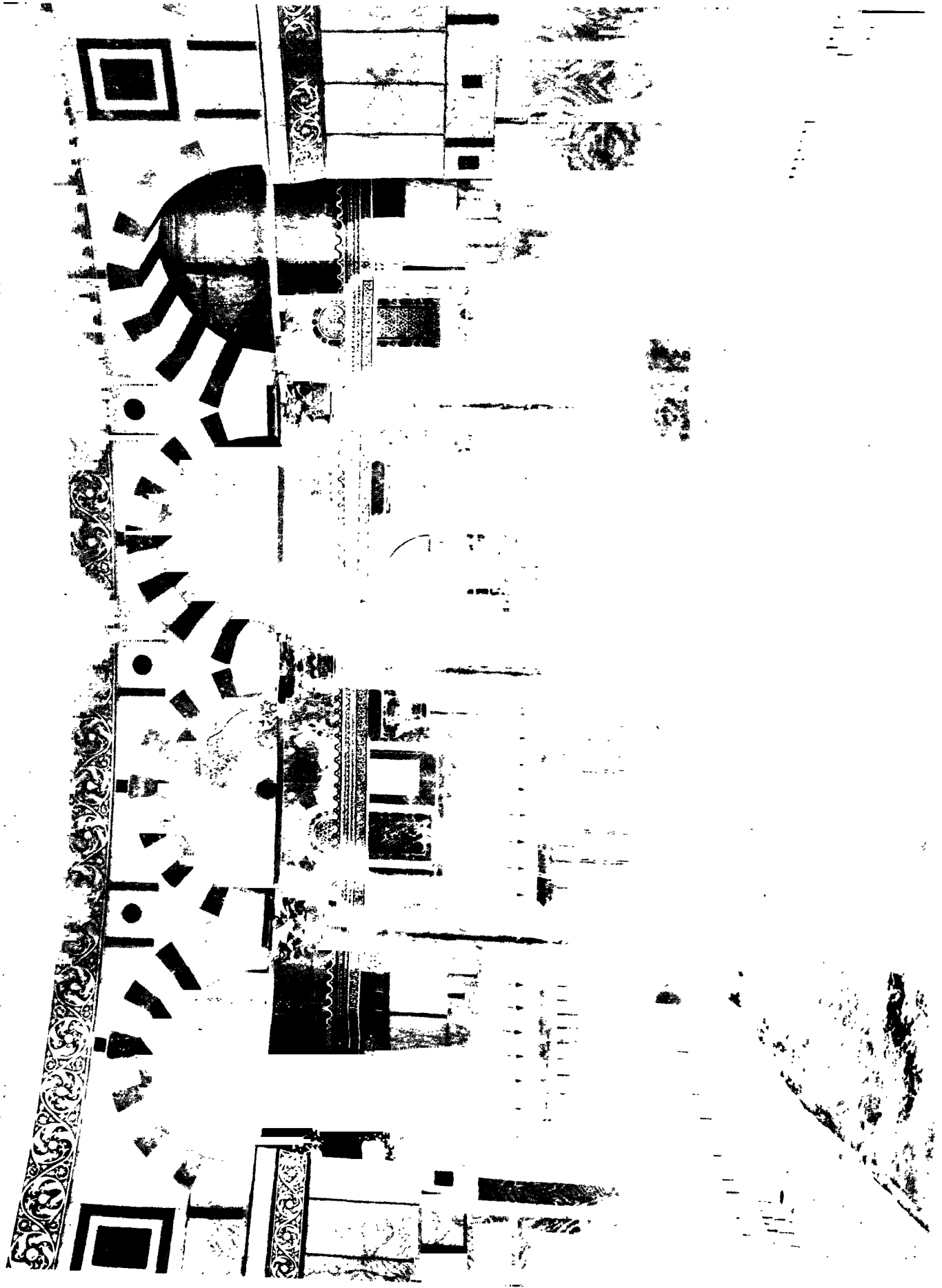


Fig. 7. The Sacred Rock

Qatrânî, a timber not, it is locally believed, subject to the attacks of worms. The ribs of the outer dome are, in the lowest section, cross braced. To the ribs of the inner dome boarding is nailed on their inner face. This boarding carries the painted and gilded plaster ornament seen from within. A key to hold the plaster is provided by palm-tree fibre glued to the boarding before the plaster was laid on. The ribs of the outer dome are also covered with boarding on the outside, and to this boarding is fixed the sheet-lead outer covering. The additional ribs, already referred to as being laid under every eighth rib of the outer dome, did not form part of the original design. They are a comparatively recent addition made for reasons which appear when the summit of the dome is examined. The outer dome has settled unevenly. This settlement has thrown its axis at the top about 15 centimetres towards the south-south-west, so that its summit is no longer exactly vertically above that of the inner dome. When this occurred the ends of some of the ribs of the outer dome became separated from the ring against which they were designed to abut. In order to get over this inconvenience, an additional ring was placed under the old one and forms an abutment for the four additional ribs. In order to give extra security, the additional ribs that run north-east and south-west were tied together by flat, iron bars 5 by 1 centimetre in section and descending down these ribs to which they are bolted as far as the first horizontal plate. The other two additional ribs, those that run north-west and south-east, were strengthened in the same manner. On one of the timbers of the outer dome is an inscription in Kufic characters that gives the date (A.H. 410, A.D. 1019) of the construction of a dome of which this timber formed a part. The actual dome is probably later in its construction, though containing material from the earlier dome.

Dome of the Rock

The part of the structure which encloses the octagonal area outside the domed structure just described is bounded by a wall about 1 metre 30 centimetres thick and clothed on its inside throughout its height with marble. This wall is built on an octagonal plan. The length of each face of the octagon is equal to the diameter of the drum, that is to say, three times the height of the main supports of the drum. The height of the octagon also bears a relationship to the height of the main supports of the drum. This relationship is shown on Fig. 2. The north-west, south-east, north-east, and south-west façades of this octagon are each provided with five windows, and the other façades have each four windows and a central door. Measured on a line passing through the centres of any two opposing piers that carry the dome there is a distance of about 11 metres from the outer face of the pier to the inner face of the octagon wall. This space of 11 metres is divided into two parts by an intermediate arched colonnade built upon an octagonal plan. The function of this colonnade is to share with the outer octagonal wall and the inner cylindrical structure the support of the roof over the space between the outer octagon and the dome-covered inner cylinder. The distance of this colonnade, on the north and south or east and west axis, from the drum equals the height of the main supports of the drum. A line passing through the centres of two opposing piers of the central structure and prolonged till it meets the wall of the outer octagon does not pass through the centre of the side of the octagon (Fig. 1). Similarly a line drawn north and south across the inner structure in such a way as to pass through the centres of opposing columns and prolonged till it passes northwards through the north door and southwards through the south door does not pass through the centres of these doors. The same applies to a line drawn east and west.

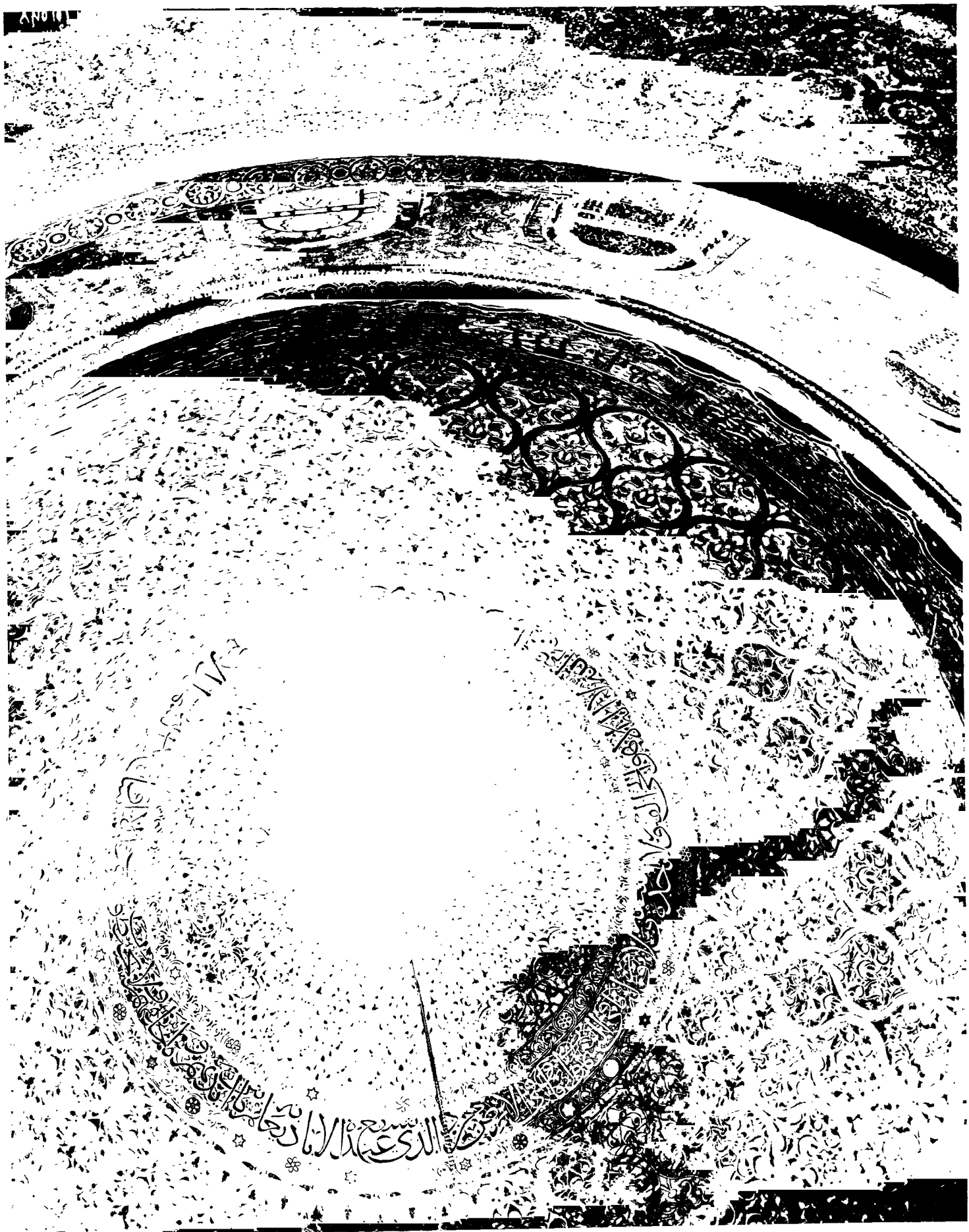


Fig. 8. Interior of the Dome showing the ornament of gilded and painted plaster work

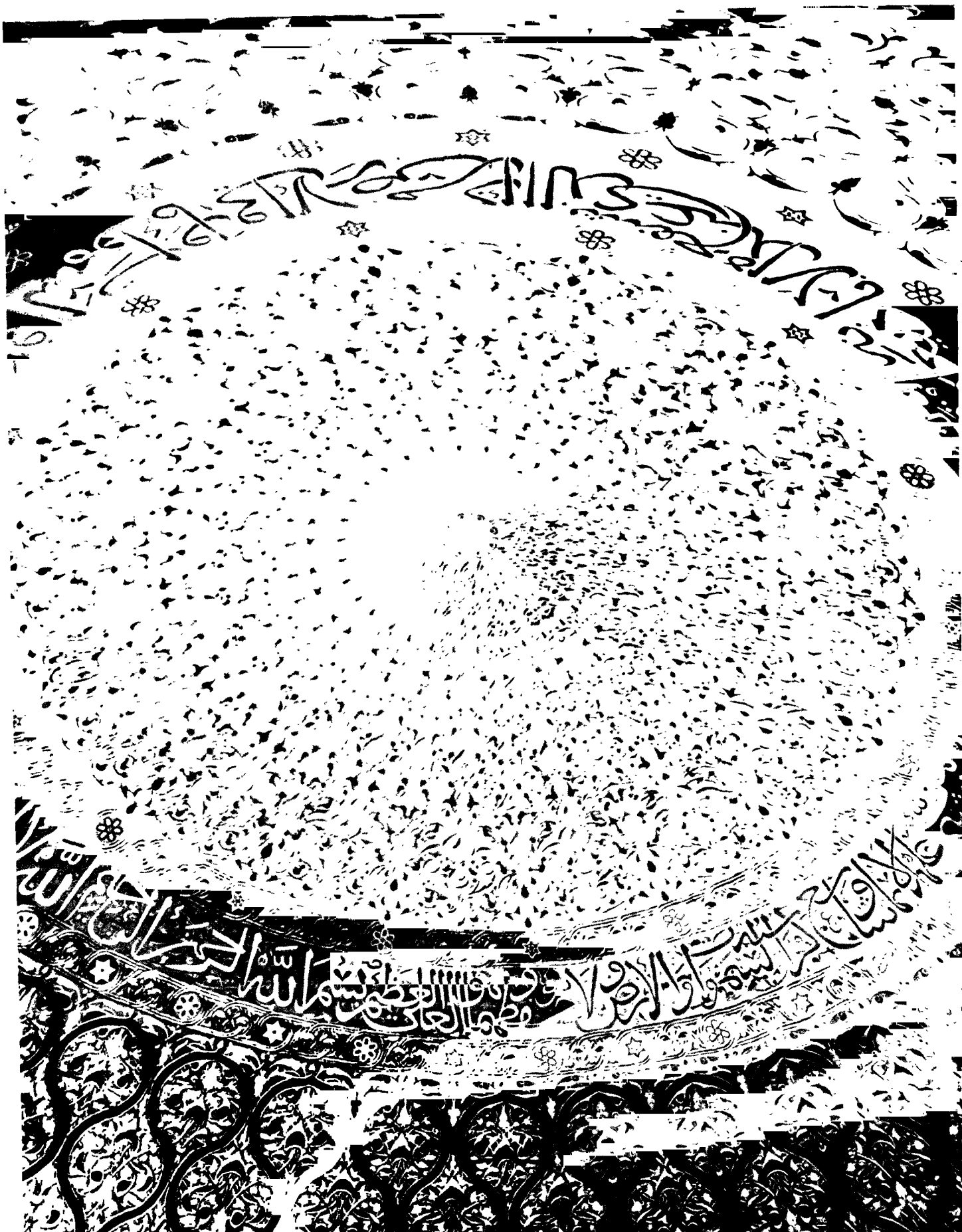


Fig. 9. A view of the Dome showing the decoration of its upper part

The variation amounts to about $2\frac{1}{2}$ degrees. That is to say, that the axis of the inner structure and the axis of the octagons do not coincide, although the centre of the one coincides with that of the other. These variations are shown on the plan (Fig. 1). Whether they are intentional or accidental inaccuracies of setting out must be a matter of opinion. The axis of the intermediate octagonal colonnade coincides with that of the outer octagon. At each of the eight angles of the intermediate colonnade is a masonry pier clothed in marble. There is a distance of 4.10 metres from the outer face of these piers to the inner face of the outer wall. In addition to the angle piers there are, in the intermediate colonnade, sixteen columns of coloured marbles, two columns to each face of the octagon. The diameters of these columns, like those of the drum columns, vary considerably. A heavy horizontal lintel (Fig. 10) formed of timber and measuring 76 centimetres wide by 29 centimetres high is placed above the columns. On the top of this lintel a course of stonework 32 centimetres deep is built. This double lintel of wood and stone is ornamented on the inside by a carved wooden frieze and cornice. The underside of the timber lintel and its outer face are covered with sheets of metal upon which a vine pattern has been hammered. The stone lintel on its outer face is hidden by a marble casing. Arches struck from two centres spring above the lintels from column to column or pier as the case may be. The soffits of the arches measure about 84 centimetres deep. The arches and the spandrels between them on each side are ornamented with mosaic. The mosaic is of glass tesserae and mother-of-pearl; occasionally a Turkish soldier's medal is found, introduced no doubt by some workman who desired to make an offering to the shrine. The ceiling over the space between the cylinder and the intermediate octagon is a flat, painted ceiling varied by dished

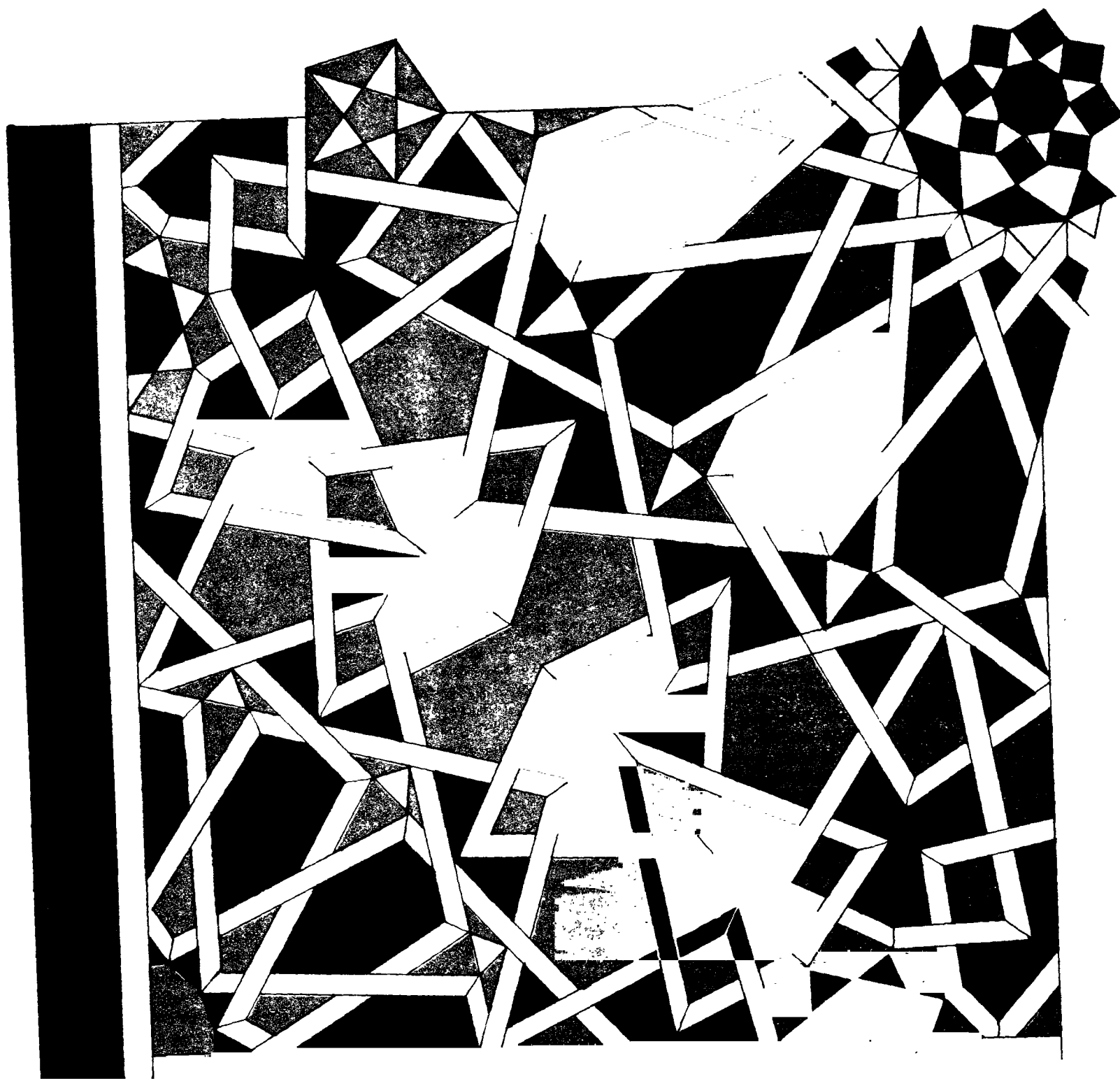


Fig. 11. One quarter of a tessellated pavement opposite the southern door

Scale 1:7.5

The floor is for the most part of slabs of white marble. But next to the wooden screen enclosing the Rock on the western side the floor consists of a tessellated pavement in three panels of geometrical design. This pavement is of late date. Opposite the southern door is a fine panel (Fig. 11 shows a quarter of it) of tessellated pavement geometrical in design similar to, though not exactly the same as, that of the panel in the ceiling immediately over it. The whole of the floor was at one time no doubt elaborately ornamented with different coloured marbles. Between the inner cylinder and the outer octagon the floor is not horizontal. It slopes downwards from the columns of the inner circular structure to the intermediate octagonal colonnade and thence upwards to the outer octagon wall. The fall is from 9 to 10 centimetres. There is reason for believing that this fall may date only from the time when the bases of the columns, forming the intermediate colonnade, were boxed in the cubical casings of panelled marble seen to-day (Fig. 4). Fig. 12 represents the base of the northernmost of the two columns forming the intermediate colonnade on its north-western side. The drawing shows that the coloured marble shaft is set upon a base of white marble 38 centimetres high. A lead joint divides the shaft from the base. The base is set upon a pier of hard stone square on plan with sides measuring about 66 centimetres. The height of this pier could not be ascertained. Perhaps it is footed on rock. Nor is known the height of its topmost stone upon which the marble base is set, but it shows no joint at a depth of 60 centimetres below the joint between it and the marble base. The joint between the marble base and its stone support is level with the floor at the point where stand the columns of the inner circular structure immediately round the Rock; but this joint is about 10 centimetres higher than

Dome of the Rock

the floor in its immediate neighbourhood. It is not likely that, before the marble boxing was put up, the floor sloped as it now slopes; because, had it done so, about 10 centimetres of stone pier would have been visible below the marble base and above the floor-line. Fig. 12 shows that

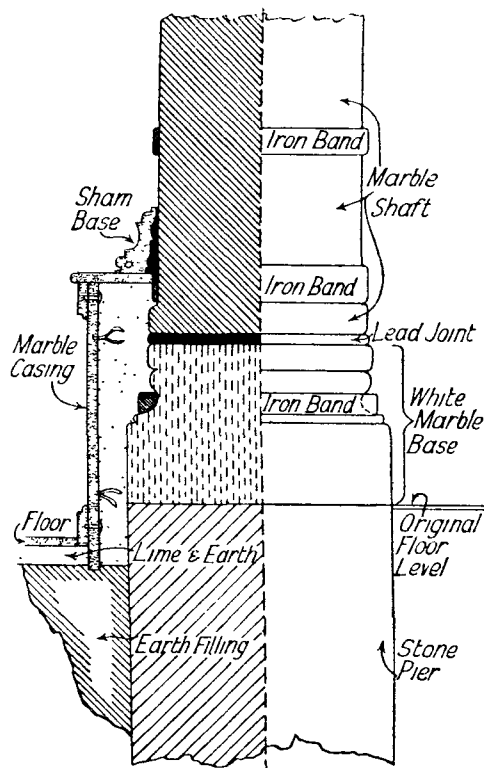


Fig. 12. Marble boxing round original base of intermediate colonnade.

the column and the base are encircled with iron bands necessitated by the marble having split. As these bands exist on the shaft and base illustrated, they may also exist on others that cannot yet be examined. Their presence may account for the marble boxing. Those who built this boxing probably did so to hide what seemed to them an ugly feature. But the result is not altogether happy. The old base is hidden, and a new base moulding is added in the form of a marble collar round the shaft. This moulding is set on the top of the panelled marble box that conceals the old base. The marble

slabs of this box are fixed by copper ties to a core of plaster and broken stones that fills the space between the slabs and the original base. By this arrangement the apparent height of the shaft is reduced by about 32 centimetres. The restorers seem to have been conscious of the difficulties, and although they had to accept the spoiling of the shaft's proportions, they desired that the new marble casing to the base should not look too squat.

With this object they lowered the floor-level at this point, thereby gaining about 10 centimeters in height, enough to make a good deal of difference in the proportions of the marble casing. This casing appears to date either from the repairs carried out in 1853 or those in 1874. The casing to the bases of the colonnade immediately round the Rock is earlier and probably dates from the sixteenth century, but was restored in 1874.

The general condition of the building structurally is good. There is no evidence of instability or of settlement in the supports of the dome or in the intermediate octagonal colonnade. The external octagonal wall seems also to be structurally sound; but there is some evidence of a slight settlement at the angle where the northern and north-western façades meet. It is not a serious matter; but it will be desirable, if and when general repairs are undertaken, to examine the foundations at this point. It would be well also to fill with cement grouting the masonry of the drum where, as may be seen from inside the roof over the octagon, joints have widened and the masonry is partly dislocated, no doubt by earth tremors. Metal ties would, of course, be of no use in a serious movement; but they might be a safeguard if slight tremors occurred. The timber of the Dome and of the roof over the octagon is for the most part in a good state. It is true that worms are not altogether absent; but there is no immediate need to replace any of the timbers. The wall-plates appear sound.

The priests of the Armenian Patriarchate still speak of two great works of repair carried out to the Dome of the Rock during the nineteenth century, one about 1853 and the other about 1874. Both lasted several years. The repairs of 1853 were directed (I am quoting the information given me at the Patriarchate) by an Armenian architect named Garabet. Garabet Kalfa was an expert in dome

Dome of the Rock

construction. He came from Constantinople. With him came many Armenian craftsmen. It was probably Garabet who strengthened the Dome in the manner already described. He is said, too, to have repaired the interior decoration. Large numbers of Armenians were also used for the repairs carried out by Sultan 'Abd al 'Azîz about 1874. The reconstruction of a large proportion of the timber roof over the octagon dates from one or other of these large repairs. An attempt was even made to repair the gaps in the mosaic decoration. This was done not with tesserae but by plastering the denuded spaces and painting them to imitate mosaics. One of the workmen left the following prayer painted on the wall among the mosaics: 'O Lord, preserve your servant Ibrahim al Tawil and his children.' The lead sheeting of the Dome and that of the roof over the octagon were renewed at the same time. According to the Sheykh Khalîl al Dunuf, one of the oldest attendants at the shrine, the existing plain marble flooring and the marble casing of the bases to the columns of the intermediate colonnade date from the same period. The Sheykh told the writer that when the former floor was taken up two inscriptions were found buried under it, one in Hebrew and one in a language he described as Syrian. These inscriptions were removed. Inquiries made at the Armenian Patriarchate shed no light on their whereabouts. Many other objects disappeared during these repairs, among them some large wrought-iron candlesticks. One like them is still left, a very fine piece of (?thirteenth-century French) work. It is said also that embroidered cloths hung like a tent over the Sacred Rock and were held in place by thick ropes of silk. These, with many tiles and marble slabs from the older floor, were stored in a building called the Najâra, which has served for many centuries as a store for building materials either removed from or intended for the

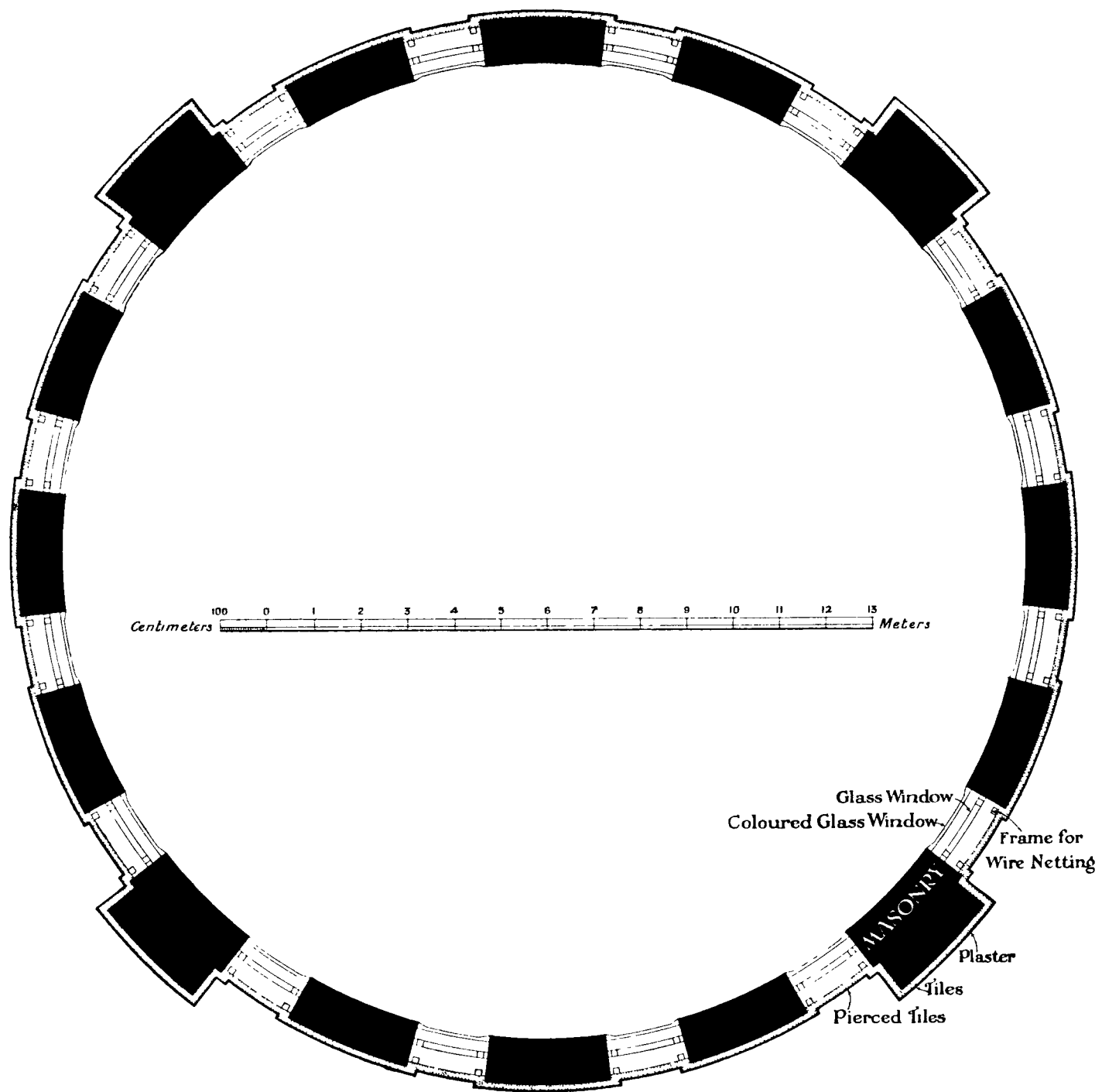


Fig. 13. Plan of the Drum.

Dome of the Rock

Dome of the Rock. Though most of this material has now disappeared, there remains enough to form the beginning of a collection of tiles of many dates, of marble capitals, bases and inscribed slabs, and some metal work. There can be no doubt that the great repairs carried out during the last half of the nineteenth century were very considerable operations. Between them, the 1853 and 1874 repairs affected practically the entire building both in its structure and in its surface decoration. Hardly anything was left untouched. Externally the tile-covering was renewed; large numbers of new tiles were imported. Internally the plaster designs covering the Dome and ceilings were repainted: gaps in the mosaic were filled also by painting; new coloured windows were made for many of the openings; the marble covering the walls was repaired and that covering the floor was entirely renewed, except for a fine panel opposite the south door (Fig. 11). But it was one problem to deal with the structure and quite another one to touch the decoration; and to-day, though the bones of the building are fairly sound, the condition of its inner and of its outer skin leaves much to be desired. The external decoration has naturally suffered more than the internal decoration.

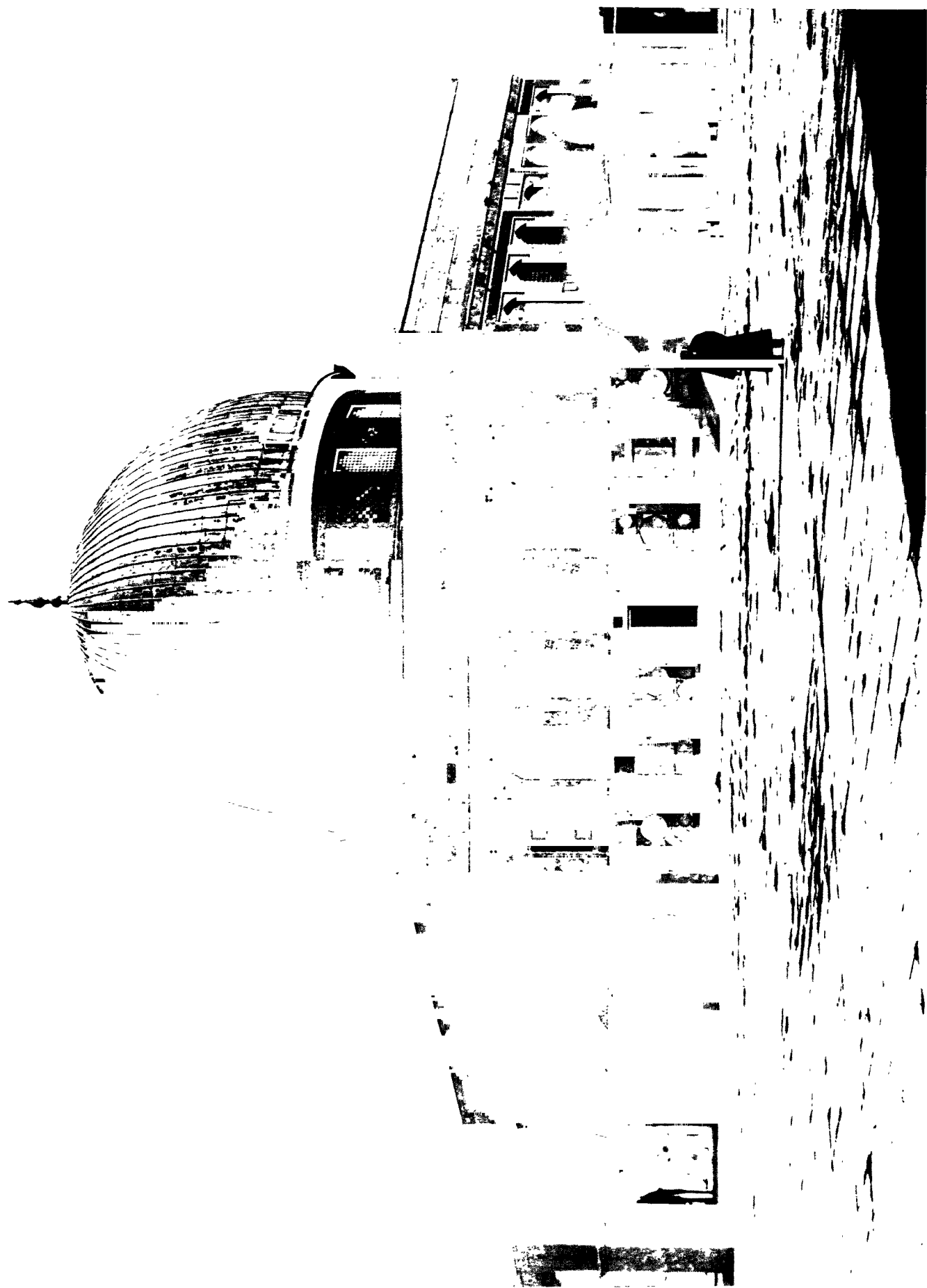


Fig. 14. The Dome of the Rock. The west, south-west, and south sides



Fig. 15. The Sacred Rock seen from the gallery at the springing of the dome

II

THE EXTERNAL DECORATION

THE outside of the walls of the Dome of the Rock has been decorated with tiles since the early sixteenth century ; possibly, even, since the fifteenth century.

The tiles are set, for the most part, upon a bed composed largely of plaster. The weather in Jerusalem is, during the winter months, severe. Heavy rain is frequent, and frosts and snow are not unknown. In such circumstances it has been necessary frequently to carry out repairs to the tile-covering during the last four hundred years. Hence it is not surprising to find tiles of many periods and of different qualities and characteristics. The same standard has not been maintained century after century. The many repairs have tended, for reasons that will appear later, to obscure the original design. There can be little doubt that, at one time, the Dome of the Rock provided an example of one of the greatest works of tile decoration ever undertaken. To discover the original design would be, then, of interest in the history of tile decoration and might be of use in providing a guide for any works of preservation that may be carried out. For this purpose it is necessary to examine the tiles in detail and to sort them into their respective periods. Thus at least a rough idea can be formed of the extent of the various repairs, and of the nature, in its main

lines, of the original design. The first need is, then, to attempt a classification of the tiles according to their several characteristics.

The following classification is based only upon visible characteristics. No analysis of the tiles or of their colours and glaze has been made. The visible distinctions between the many different kinds of tile consist in the colour of the clay, the methods of workmanship, the degree of technical success attained, skill in draughtsmanship, the colours used, the nature of the design, and, occasionally, dates. The tiles (excluding for the moment the glazed bricks and the faience mosaics) group themselves into six main periods. These periods are represented by enamelled tiles of the fifteenth or early sixteenth century; glazed tiles of the middle sixteenth century; glazed imported tiles of the kind commonly known as Rhodian; tiles of seventeenth-century manufacture; tiles of the eighteenth and early nineteenth centuries; imported tiles of the late nineteenth and twentieth centuries. Each of these six periods may be further subdivided according to the varieties of colour and draughtsmanship and the degrees of technical attainment found in the tiles belonging to them. For instance, there are two kinds of enamelled tile; three kinds of glazed tile of the sixteenth century; four kinds of seventeenth-century tile; three of the eighteenth and early nineteenth and four of the late nineteenth and twentieth centuries.

In the chronological diagrams (Figs. 43 bis to 66 bis) it has been found more convenient to ignore the many phases of each period and to distinguish only the six main periods. These alone show that the present tile-covering is a patchwork of many dates; but this characteristic becomes still more evident when attention is also drawn to the many other phases referred to.

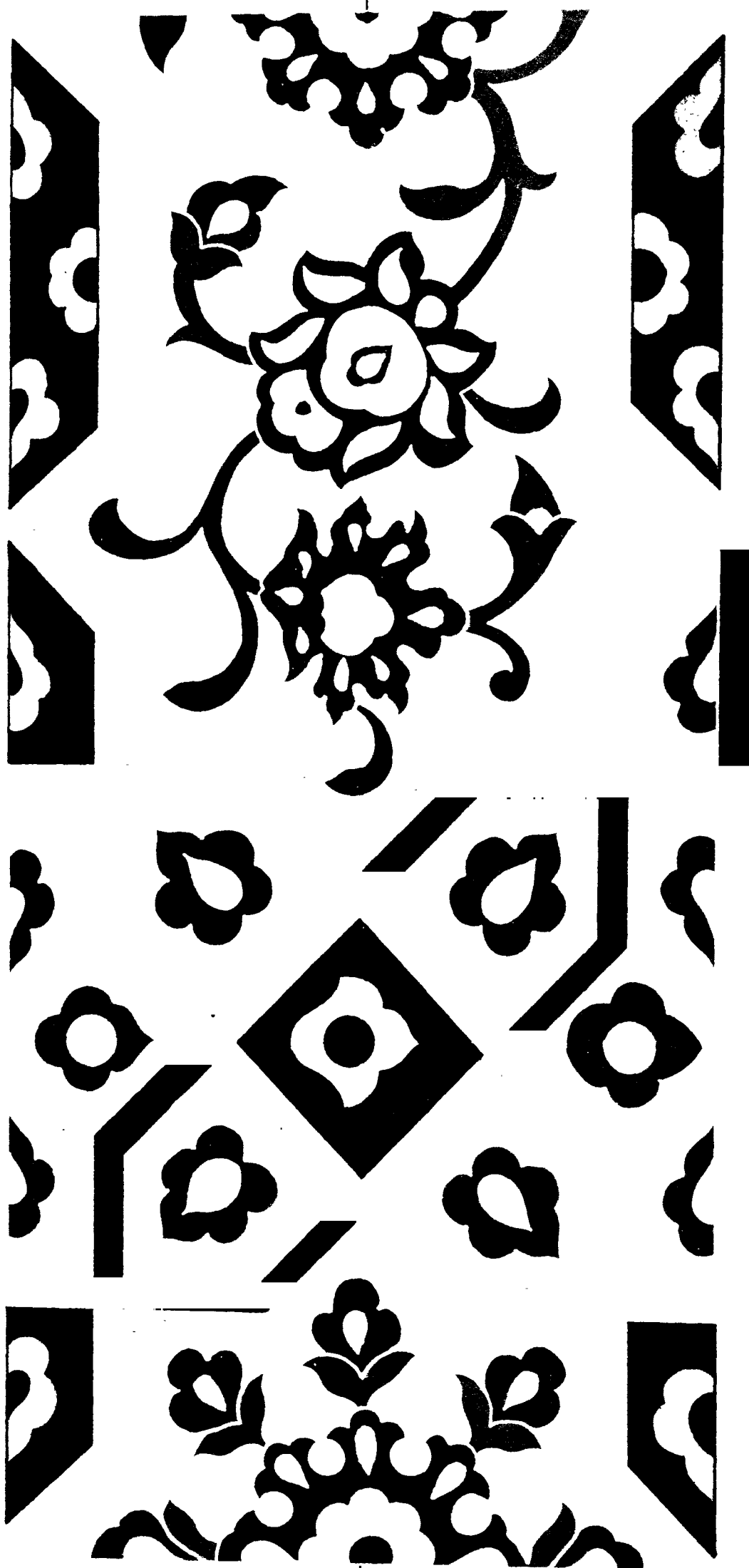


Fig. 16. Tiles of the First Period, showing a strong colour effect

Scale 1 : 2

§ 1. *The First Period.*

As might be expected, the oldest work is found for the most part in the most protected and least accessible positions. The cornice that divides the drum from the Dome protects the tiles covering the drum in a manner not enjoyed by those on the octagon. This leaded wooden cornice prevents rain from entering from the top and disintegrating the plaster setting of the tiles on the drum; but the tiles of the octagon are apt to be loosened by rain entering through the joints in the coping of the parapet wall and also through the joints in the upper surface of the tiled cornice, descending thence between the wall and the tiles and disintegrating on the way the plaster bedding.

The chronological diagrams show that there is a larger proportion of the earliest tiles on the drum than on the octagon.

The system followed in painting these tiles is different from that followed in painting all the other tiles found on the building. They have no glaze separate from the colour. The colours and the glaze were mixed together and then applied together by means of a brush; the outline of each of the coloured spaces forming the design is in black without glaze, and forms, as it were, a trench between the raised enamelled surfaces of the coloured spaces, thus preventing the colours from running together during baking.

The colours used are dark blue, turquoise blue, yellow, green, and black. There are two kinds of design: a design for a border pattern and two varieties for tiles intended to form panels. The border design (Fig. 16) is geometrical in its main lines; these are white. The spaces within the white geometrical lines are filled with a floral design. The colours of some of the flowers are white and black and of

Dome of the Rock

others yellow and black, and the stalks and leaves are in turquoise blue. The ground is dark blue alternating with black, no contiguous spaces having the same coloured ground.

The colour-effect is strong, almost violent; and the drawing is decided. The design is made to tell at a distance. Ten tiles are needed to make a complete unit of the design. This border pattern is at present found above and below the great inscription running round the drum, it also surrounds the windows of the drum and in part encircles the drum in a band between the window-sills and the lead roof of the octagon. Though there is no reason to suppose that this disposition does not fulfil the intention of the original designers, it is clear that the tiles have been reset, for practically all have been readjusted and reduced by chiselling.

The tiles composing the panel designs of this early period are based upon two motives, a cross (Fig. 18) and a leaf-and-flower pattern (Fig. 20). As in the border pattern just described, the main lines of the cross motive are in white; the colours used for the ground of the design are black, dark blue, and yellow, the centre of the cross having a black ground and on it a turquoise-coloured rose, the arms of the cross having a dark blue ground and on it a yellow-coloured leaf, while the spaces between the arms have a yellow ground and on it either a green or a black pattern. Thus no contiguous spaces have the same coloured ground. The same principle is followed in the leaf-and-flower pattern (Fig. 20), where the ground colours are alternately dark blue, black, turquoise, and green, while the pattern itself is in white, yellow, and turquoise. The effect is rich. A fair number of tiles with the cross motive still exists, mostly on the walls of the drum, but others are found on the walls of the octagon, principally on the south and south-eastern façades, façades that are less exposed to the

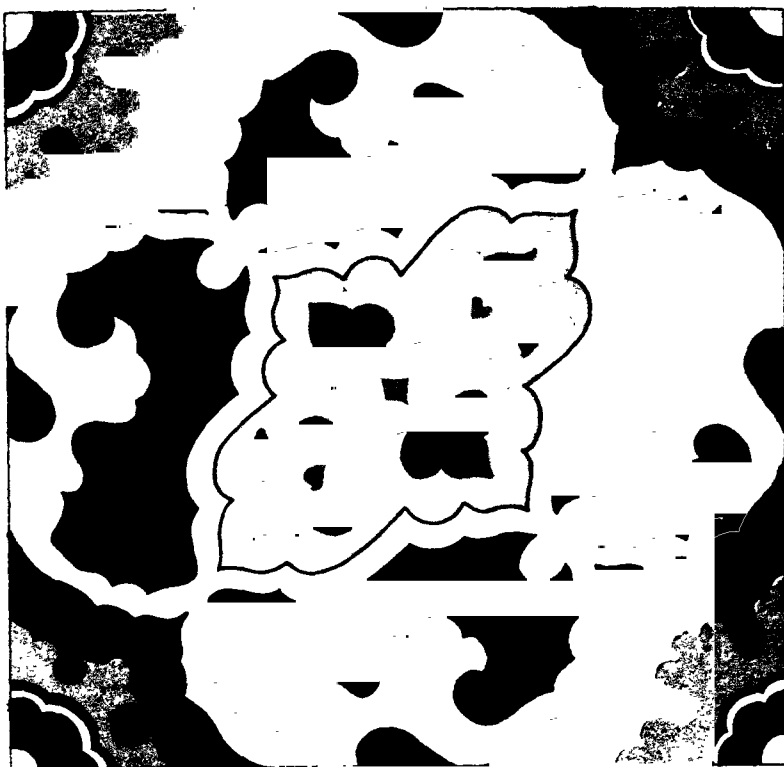


Fig. 17

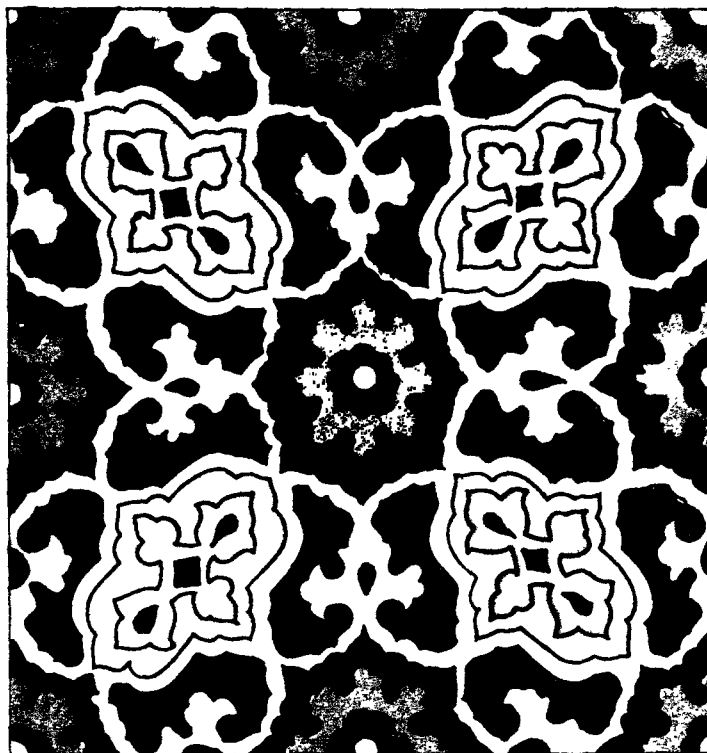


Fig. 18

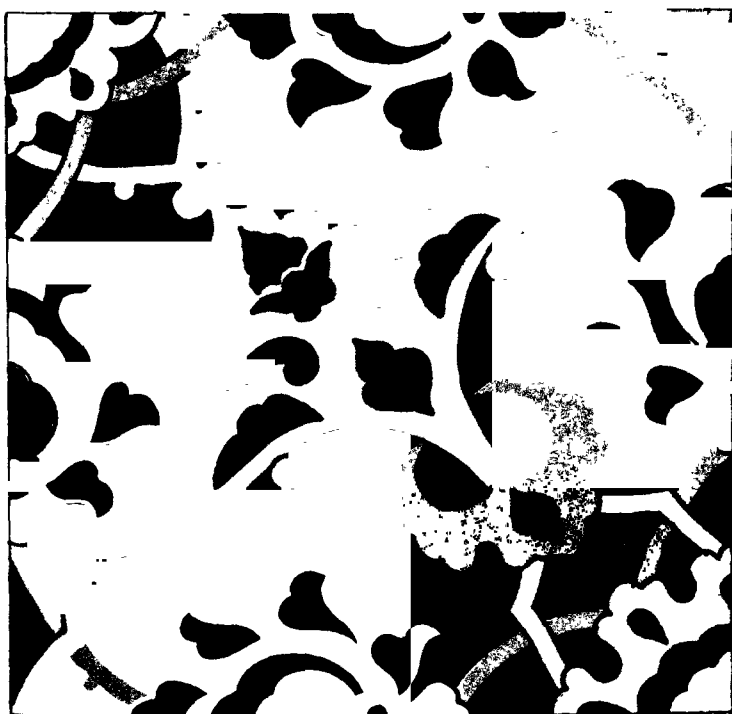


Fig. 19

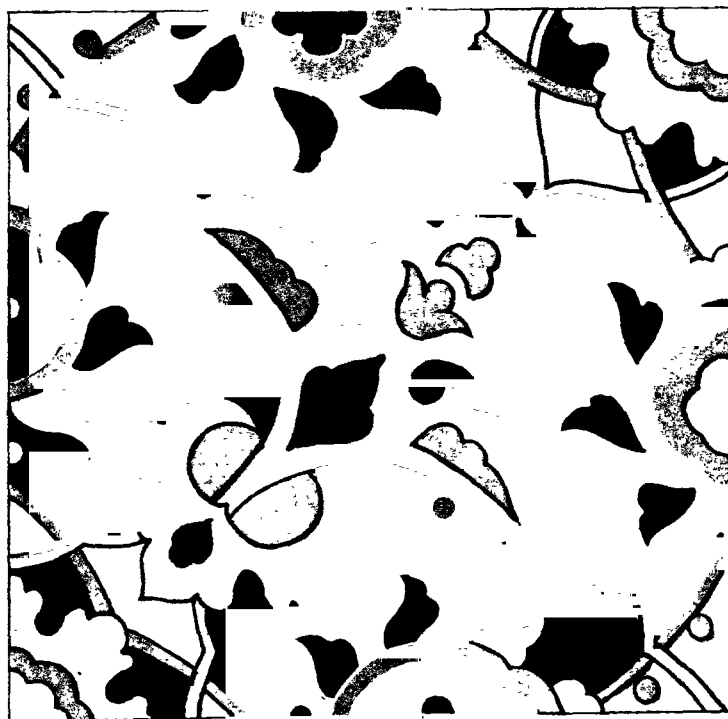


Fig. 20

Tiles of the First Period

Scale 1 : 2

weather than any of the others. Practically all have been reduced by chiselling and none are in their original setting. Of the brilliant type of tile illustrated in Fig. 20 only four still remain. These are under the arch of the northernmost blind bay on the north-eastern façade of the octagon. This is not their original position. They have been used here to fill up a space and have been cut down to make them fit. Fig. 19 represents a tile decorated with the same motive as that shown in Fig. 20, but of a less brilliant colour. A good many of these tiles are on the drum and others are scattered about the less exposed faces of the octagon. They belong to the same enamelled type as the border pattern and the others already described, but are possibly a few years later and represent perhaps the beginning of a tendency towards a less brilliant colour-effect, a tendency which becomes more marked later, when white takes the place of colour as a ground and the number of colours used on any single tile is reduced from six to three and even to two. At the time when the enamelled tiles were made, a rich colour-effect was clearly the chief object of the designers. Whether the building was ever entirely covered with tiles of this kind cannot be said. But it seems likely that the drum of the Dome at least was so covered. The panels between the windows of the drum were certainly not intended to be filled, as they are filled at present, with tiles of different designs and dates, but were rather decorated completely with tiles of uniform design. Since some enamelled tiles are still found on the walls of the octagon, it is likely that these walls were also at one time entirely covered by tiles of this kind. The tile shown in Fig. 18 is less fitted to tell at a distance than the tiles shown in Figs. 19 and 20; and, since many tiles of this design are found on the octagon, it is not unlikely that they were made for it. On the southern side of the north-

eastern buttress of the drum is a tile of the same size as the tile shown in Fig. 18, but containing only a quarter of the pattern. This tile is illustrated in Fig. 17. The sizes of the spaces agree fairly well with those of the tile shown in Fig. 20 and the design is clearly made for a position farther from the eye than that for which the tile shown in Fig. 18 was made. The tile illustrated in Fig. 17 is glazed and not enamelled, but it may be an imitation of enamelled predecessors, and it is possible that these tiles, with others of the design shown in Fig. 20, provided the decoration of the panels round the drum, while those shown in Fig. 18 were used on the walls of the octagon.

§ 2. *The Second Period: Middle of the Sixteenth Century.*

For the most part the tiles of this period are less highly coloured than those already described; and there is a further difference in the method of applying the colour and the glaze. In the enamelled type, the colour and the glaze were, as has already been said, laid on together, but, at a date which cannot be ascertained with precision, a change of method was made, the colours being laid on first and then covered with glaze. It may be presumed the earliest tiles made on this system are among those that most resemble in design and colour the enamelled tiles that preceded them. The reasons for thinking the enamelled tiles to be earlier will be discussed later. Above the arches of the northern and southern porticoes and on the barrel vault of the northern portico are tiles forming a border pattern consisting of panels formed by two tiles, each ending with a half-quatrefoil and alternating with a single tile decorated by a quatrefoil design (Fig. 21). The panel, composed of two tiles, is filled with a design closely resembling the floral

Fig. 21. Early phase of Second Period. Scale 1:2

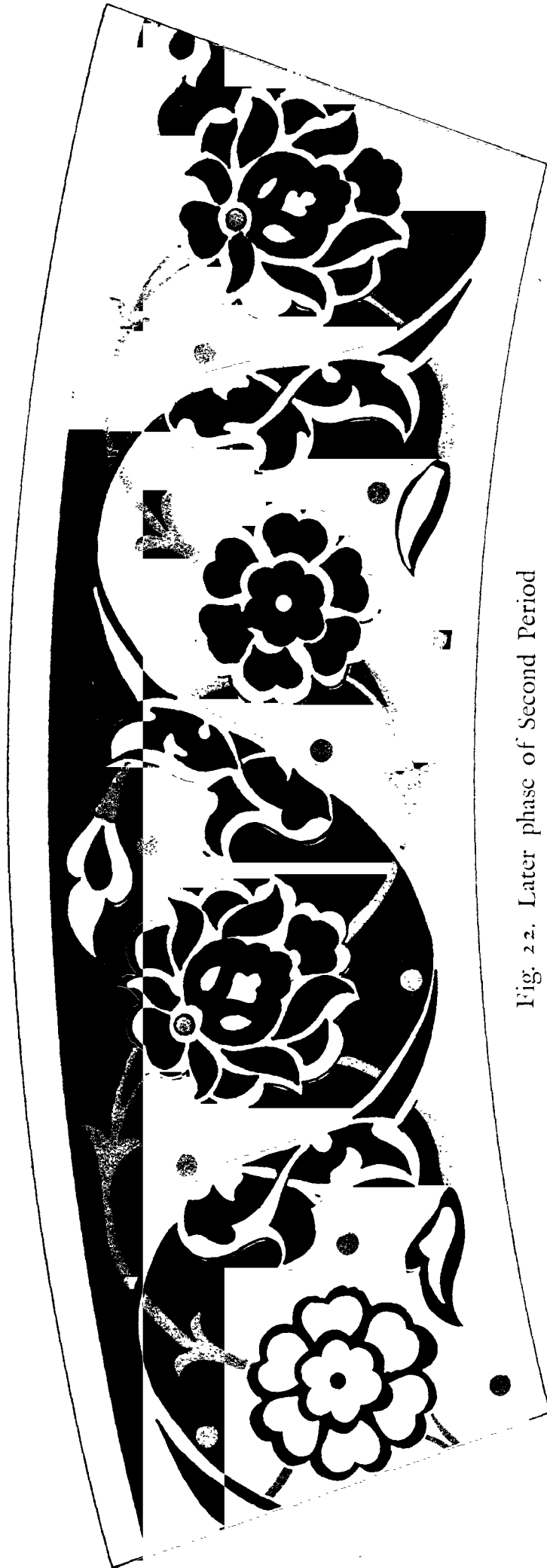
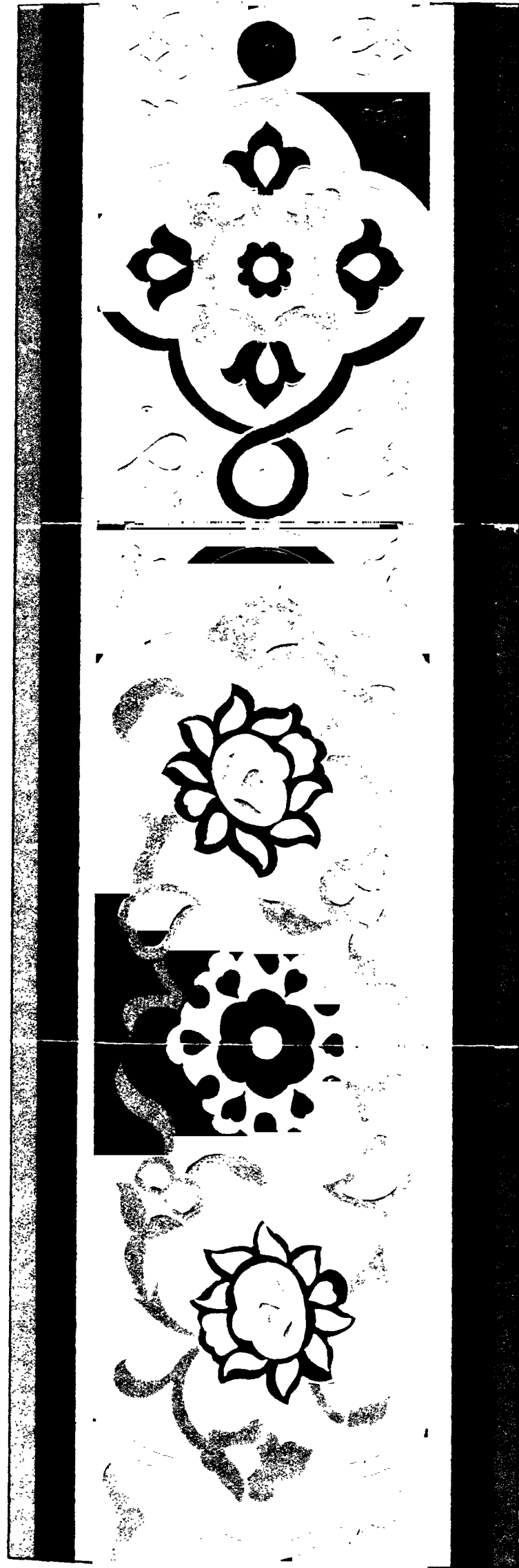


Fig. 22. Later phase of Second Period

Scale 1:2.73

design shown in Fig. 16. The design is on a dark blue ground, while the ground of the adjacent spandrels formed by the quatrefoils is black. The other colours used are white, green, yellow, and turquoise, the same colours as are used in the enamelled type. In the glazed type they are not so brilliant, nor is the turquoise of the same clear blue, but tends more towards green. The lines enclosing the panels are white, and outside the white line there is a black and then a green line. The flowers are white and their stems turquoise. Other examples of these tiles are found scattered on the different façades, chiefly on the parapet wall, where they have been used, among others of similar pattern (but belonging to different dates), to enclose the panels that now form the decoration between the cornice and the great inscription of the octagon.

The next clearly distinguishable group of glazed tiles is characterized by very fine draughtsmanship, an outline almost mechanically perfect in its evenness and certainty, by faultless technique, there being no tendency for colours to run into one another, and a perfect glaze entirely free from flaws. No yellow or green is found in this group. The colours are dark blue, black, turquoise, and white only. They are laid on with a degree of care equal to that shown in the draughtsmanship; and stippling seems to have been employed in order to give equality of tint. The ground is always dark blue or black. Specimens of these splendid tiles, perhaps the finest of all the tiles on the building, exist on the south-east façade above the great inscription, and a few others on the north façade in a similar position. All have been seriously mutilated and reduced by chiselling, and, in setting them in their present positions, no attention has been paid to their designs. Among them are tiles belonging to two designs. These can be reconstructed. One of them represents decorative battlements similar in

intention to the stone battlements (known as 'Sharafât') that crown the walls of so many Muslim buildings. The reconstruction of this design is shown in Fig. 23. No doubt these tiles were made to crown the top of the octagon. At one time there must have been more than 1,200 of them; now only eight badly mutilated specimens remain. The battlements are outlined in white, their ground is dark blue and the ground of the spaces between them is black; the flowers and stems are white where they are laid on a blue ground, but some turquoise is used for those on a black ground. The other design consists of two interlacing stems, each having large flowers; the stems are white; the flowers are mostly black-and-white, but turquoise is used in some of them; the ground is dark blue. The design is bold and is evidently made to tell at a distance. The flowers are similar to the flowers of the border patterns illustrated in Fig. 16, but are further elaborated. This design is shown between the 'Sharafât' and the inscription in Fig. 41, which represents an attempt to reconstruct the original design of the tile decoration on the parapet wall. The evidence upon which this reconstruction is based will be discussed later. The inscription drawn in this reconstruction no longer exists on the walls of the shrine except for a few fragments found on the drum and there used to divide the panels, formed of early nineteenth-century tiles, that run below the windows on the western side of the drum. About three-eighths of the splendid tiles that formed this inscription have, however, been discovered in various store-rooms existing in the Haram al Sharîf. These tiles have been sorted and arranged in their proper order in the Mugharba Mosque, which is being used as a museum for tiles and other objects found in the Haram. The tiles forming the inscription belong to the same group as those illustrated in Figs. 23, 24, and 41. They



Fig. 23. A design in imitation of battlements ('Sharafat')

Scale 1 : 3

show the same remarkable draughtsmanship and technical mastery. The letters are in white, the ground is dark blue, and the floral scroll that runs behind the letters is in turquoise often tending towards green; the outlines are in black. The inscription is the 'Ya Sîn' chapter of the Koran. The inscription actually decorating the parapet wall of the octagon gives the same chapter.

§ 3. *The Mosaic Inscription round the Drum*

This inscription, Figs. 43 to 50, is made in a type of faience of a special character. The letters, like those of the other great inscription already described, are white upon a deep blue ground. On the ground and behind the letters runs a scroll in turquoise blue. But there are other colours as well, black and also green which is not found in the 'Ya Sîn' inscription. The letters are more finely spaced than in the 'Ya Sîn' inscription, and the distribution of the white letters and the blue ground is remarkably evenly proportioned. But the main characteristic of this inscription is that it consists in mosaics, not in cubes of glass like the Byzantine mosaics, but of enamelled earthenware. The pieces forming the letters, those forming the floral scroll, and those forming the blue ground were made separately, each piece being carefully cut to the shape required by the design and then set in a bed of plaster. The operation of cutting to the shapes required was done after the enamel had been laid on and baked. This shows that in the first place it was necessary to make a number of dark blue tiles, of turquoise tiles, of green, black, and white tiles. From these the various pieces needed to make up the design were cut to templates made from an original drawing. This operation was one of enormous labour, needing both skill and patience. In spite of the great labour needed in

following this method, it has at least one great advantage over a system of decoration by tiles, because it makes it much more difficult to strip the building of its ornament. It is not, however, likely that it was with this object that the 'mosaic' system was adopted. Another explanation must be sought. It does not seem probable that the 'mosaic' inscription on the drum can be of the same date as the 'Ya Sîn' inscription in tiles which decorated the octagon. Not only is the method of workmanship entirely different, but the number of colours used in the mosaic inscription leads to the belief that it belongs rather to the period of the enamelled tiles. Moreover, the deep blue, the turquoise blue, the black, and the white of the mosaic correspond in their tints more exactly to the enamelled tiles than to the 'Ya Sîn' inscription. More especially is this similarity noticeable in the turquoise blue, the colour being identical in the mosaic and in the enamelled tiles and being in both a clear, strong, but opaque blue, while in the 'Ya Sîn' inscription it tends rather towards green. The 'mosaic' inscription is more likely to be earlier than later than the 'Ya Sîn' inscription. If the artists who made the mosaic had known how to produce, in tiles, a result so technically perfect as that attained in the 'Ya Sîn' inscription, they would doubtless have used tiles instead of committing themselves to the enormous labour of cutting out and fitting together the thousands of pieces that form the 'mosaic'. If the 'mosaic' inscription belongs to the period of the enamelled tiles, it may be asked why the inscription was not made in enamelled tiles. It has already been seen that the colours of the enamelled tiles are separated by a line without glaze, forming a trench to prevent the colours from running into one another during baking. But this precaution was not always successful. On some tiles the colours have mingled in spite of the trench. In

the glazed tiles this difficulty has been overcome and the artists were quite sure of their results, but in the enamelled process there were risks. It is suggested, then, that those who made the mosaic inscription also made the enamelled tiles; that they were unacquainted with the technique followed so successfully in making the splendid glazed tiles of the 'Ya Sîn' inscription, that they did not dare, in reproducing the sacred text, to employ the enamelled system because there was a risk of other colours invading and spoiling the white letters, a misfortune that would be for the artist rather in the nature of a definite sin than merely an accident or failure in technique; and, lastly, that these circumstances drove them to employ the laborious method of mosaic.

§ 4. *Tiles of the Later Phases of the Second Period*

Among the tiles allotted in the chronological diagrams to the second period there remain two more distinct groups to be described. It is in these two groups that the first dates are found. The tiles composing the first of these two groups show a further development and elaboration of the floral motives already illustrated; an increased freedom of line; the use of all the colours (black, white, dark blue, turquoise, green, and yellow) found in the earliest tiles, but with this important difference, that whereas in the earliest tiles all six colours are found on a single tile, producing the richest effect imaginable, in the tiles of the group now being discussed there are never more than four colours on any one tile, and more frequently only three, and sometimes only two. The whole colour-effect is consequently much less rich. White, yellow, turquoise, green, and dark blue are all used as grounds. The colours are still very evenly laid on and carefully stippled. Fig. 22, illustrating the

pattern round the inscription above the south door, gives an example of this category of tile. Other examples are the inscription above the south door; the lintel of the south door, Fig. 24; a proportion of the tiles forming the cornice, Fig. 25; the almond-tree decoration of the abutments to the arch of the south portico, Fig. 28; some of the spandrels, above the arches of the windows in the octagon, Fig. 31 especially on the south, south-east, east and north-east façades, and to some extent on the north façade; some of the rain-water gargoyles, notably on the north-east façade; a considerable proportion of the tiles forming the window borders (these tiles, see Fig. 26, are of the same design as that shown in Fig. 21, but the parts there coloured yellow and those coloured green are left white); small panels found on the east, south-east, and south façades, and containing either of the following inscriptions لا اله الا الله حقًا حقًا ; لا اله الا الله ايمانًا و صدقًا ; the voussoir-shaped tiles, Fig. 27, round the arch of the north portico; the tiles forming small panels at the feet of some of the piers on the north-east and east fronts (Figs. 32 and 33); the design shown in Fig. 33 is in turquoise on a white ground. Other varieties exist either on the Dome of the Rock or the Dome of the Chain. These varieties are black on a turquoise ground, black on a green ground, and in the Museum now being formed in the Mugharba mosque is a fragment showing the same design in black on a yellow ground. Belonging to the same period are many of the pierced tiles filling the window openings (Figs. 29, 30, and 36); a number of tiles of the design shown in Fig. 20 but coloured differently, the pattern being black and the ground yellow, green, or turquoise, specimens of some of these in a mutilated condition exist on some of the piers on the north-east façade and others are found in the Dome of the Chain. The great inscription (partly illustrated in Fig. 34) over the

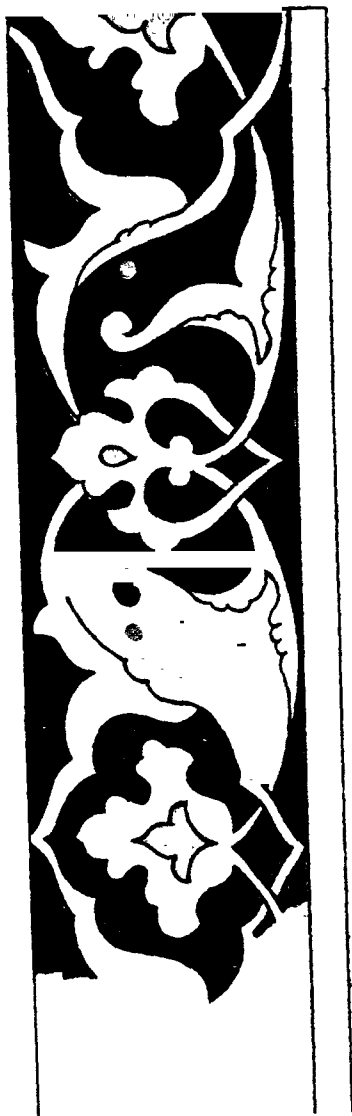
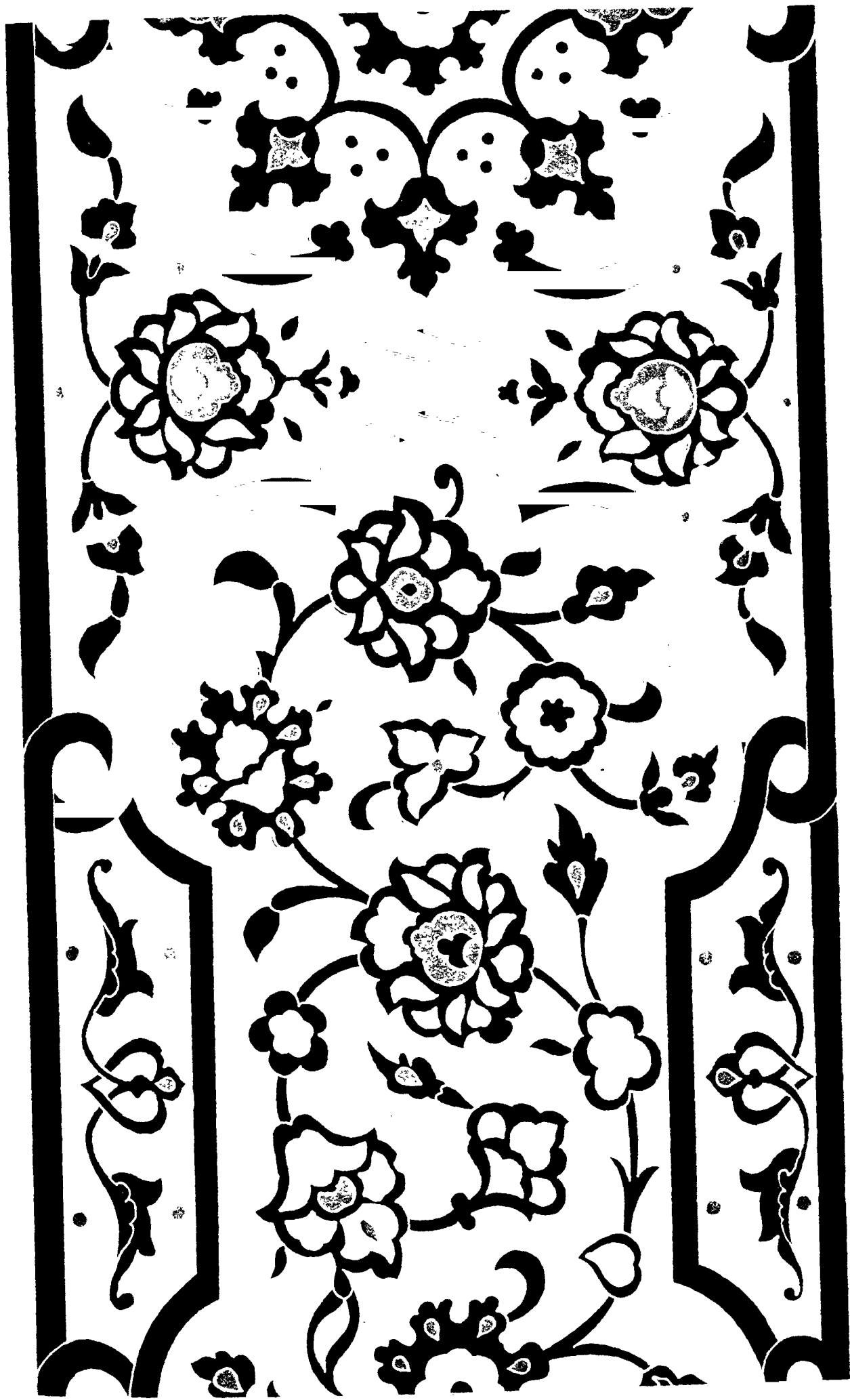


Fig. 24. Detail of design for lintel of south door
Scale 1 : 2.46

north door on the main wall of the building is of the same group; so also is the inscription in the semicircular space above the outer door of the northern portico. From this inscription we get the date of this large and important group. The date given at the end of the inscription is A.H. 959 (A.D. 1552). It cannot, of course, be said with absolute certainty that all the tiles mentioned are of this date. All that can be said is that they more nearly resemble in workmanship the tiles of this inscription than the tiles that have been grouped with the great 'Ya Sîn' inscription or indeed any others on the shrine.

The last category of the tiles grouped in the second period consist of tiles that resemble those of the type just described, but show a falling off both in draughtsmanship and in technique. Forms are expressed with less precision and with less understanding of the original intention, and the application of the colour is no longer so carefully attended to. The fine stippled effect is not found. The colour is laid on roughly, so that the strokes of the brush are visible and the result uneven. Though the floral pattern (Fig. 40) that runs under the cornice on the north façade, and of which specimens are found in the blind bays of the north-east façade, belongs, in its design, rather to the preceding group, its execution shows that the tiles were made at the same period as those of the group now being considered. Many of the cornice tiles also belong to this period, so do a proportion of the tiles forming the window borders and the inscriptions above the east and the south doors on the main walls of the octagon. Another inscription, similar in workmanship, exists above the Mihrâb in the Dome of the Chain. This inscription is dated A.H. 969 (A.D. 1561). To the same period may be attributed a number of tiles of the design shown in Fig. 35. This design is found in many varieties, in green, yellow,

white, and turquoise, on a black ground; in black on a green ground and in white on a green ground. Many of the pierced tiles filling the window openings also belong to this period.

§ 5. *Date of the Enamelled Bricks*

On the chronological diagrams a large proportion of the enamelled bricks that mark the structural lines of piers, arches, architraves, and cornice, are grouped in the second period, that is to say, in the period that followed the earliest or enamelled-tile period. It is, however, impossible to say with certainty that they all belong to this period; some of those grouped in the second period may well be earlier and of the same date as the enamelled tiles. These bricks are of several colours, turquoise blue, dark aubergine (nearly black) and light aubergine.

The year 1561 seems to mark the end of a period of great activity in tile-making. The period divides itself very clearly into several distinct phases; the opening phase characterized by the blaze of colour given by the enamelled tiles; a second phase distinguished by elaboration of design and by perfection of draughtsmanship and of technique; a third marked by a further elaboration of motives, by a reduced colour scheme with the introduction of white instead of coloured grounds, but still retaining remarkable technical perfection; and lastly a fourth phase during which both design and execution begin to show signs of decline. When did this great period begin?

§ 6. *Date of the Earliest Tiles*

There is no earlier date than 1552 given on any tile. But before that date there were at least two important



Fig. 25. Main Cornice: unit of the design
Scale 1:2

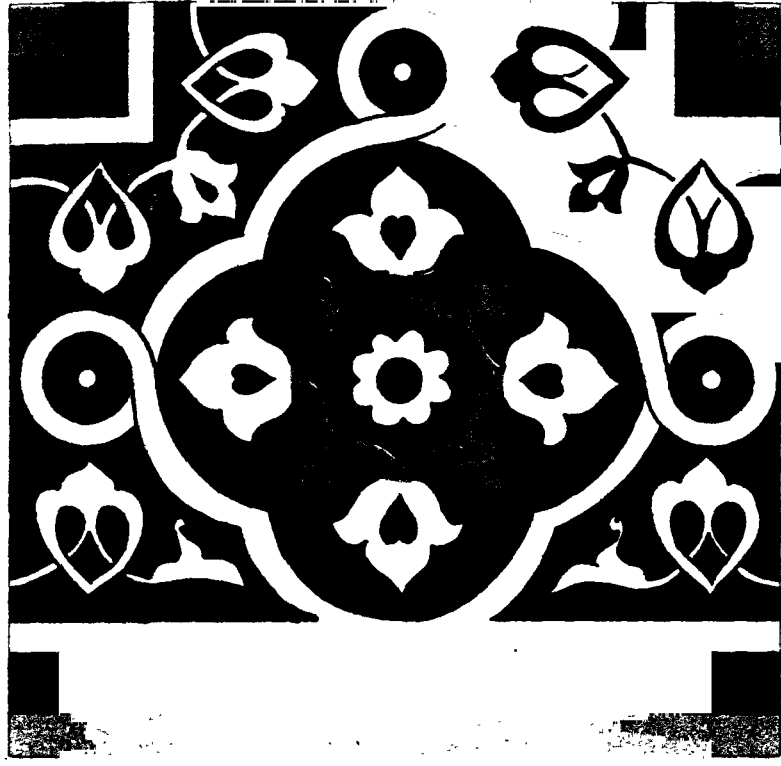


Fig. 26. One of tiles forming decoration round windows of octagon
Scale 1:2

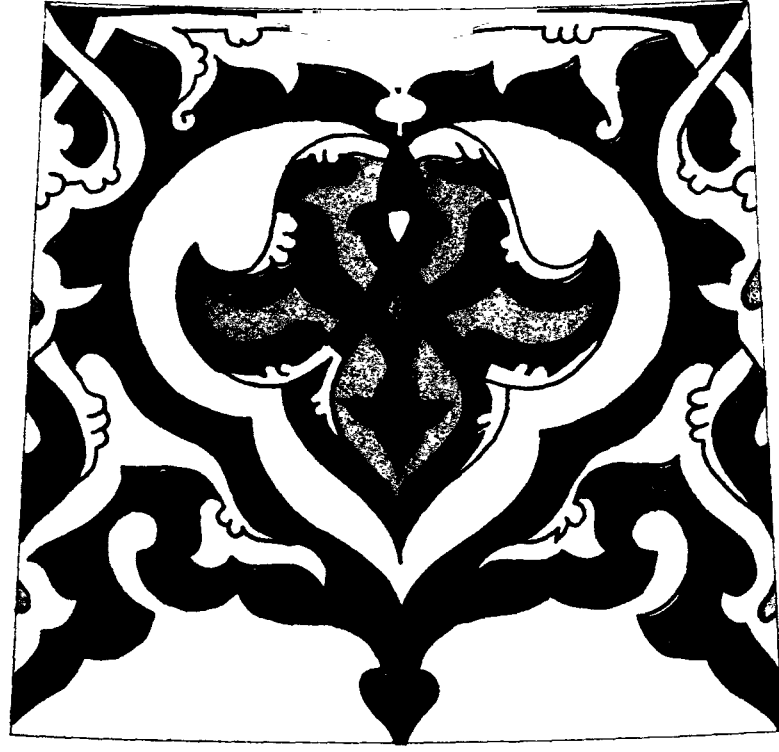
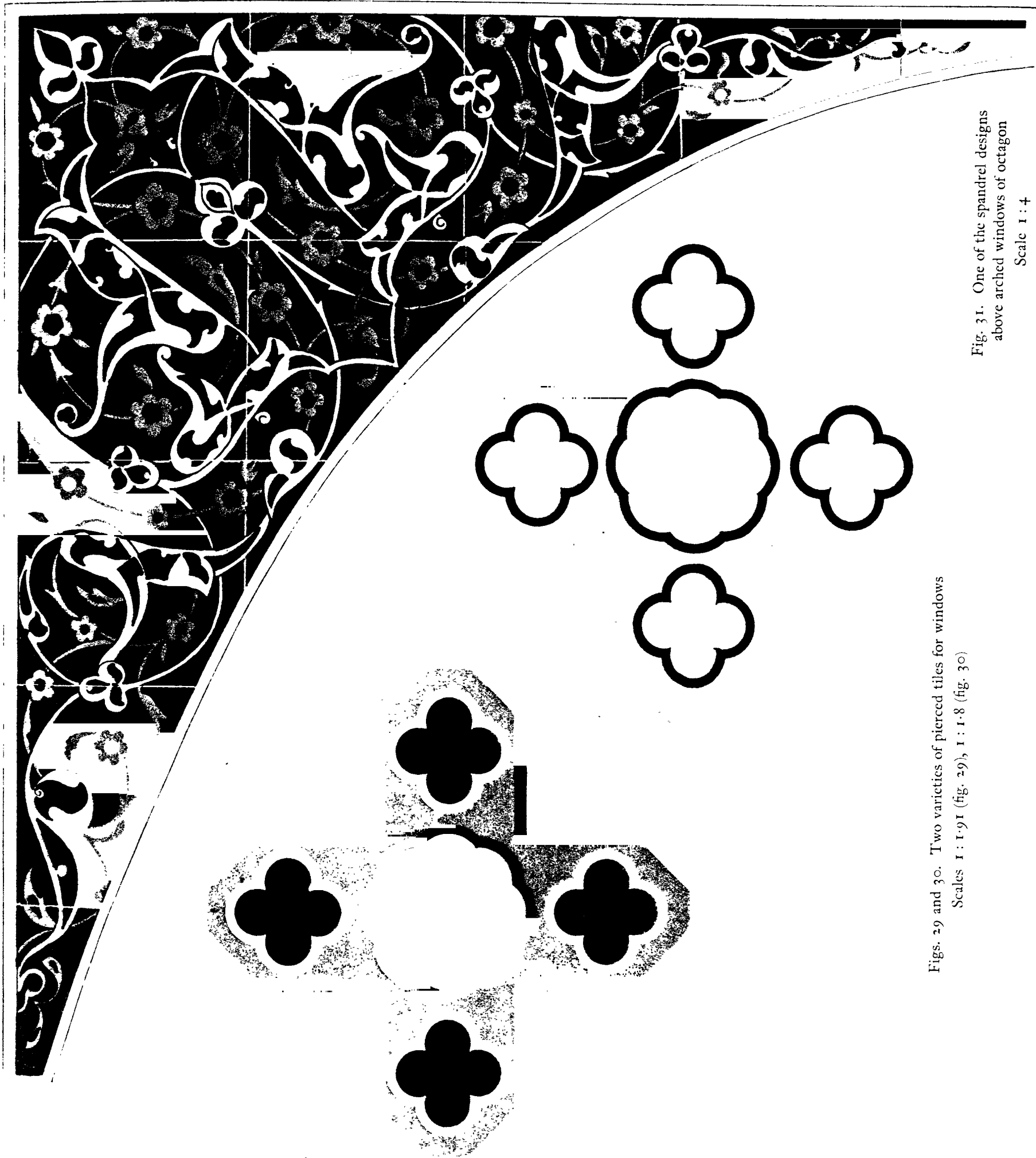
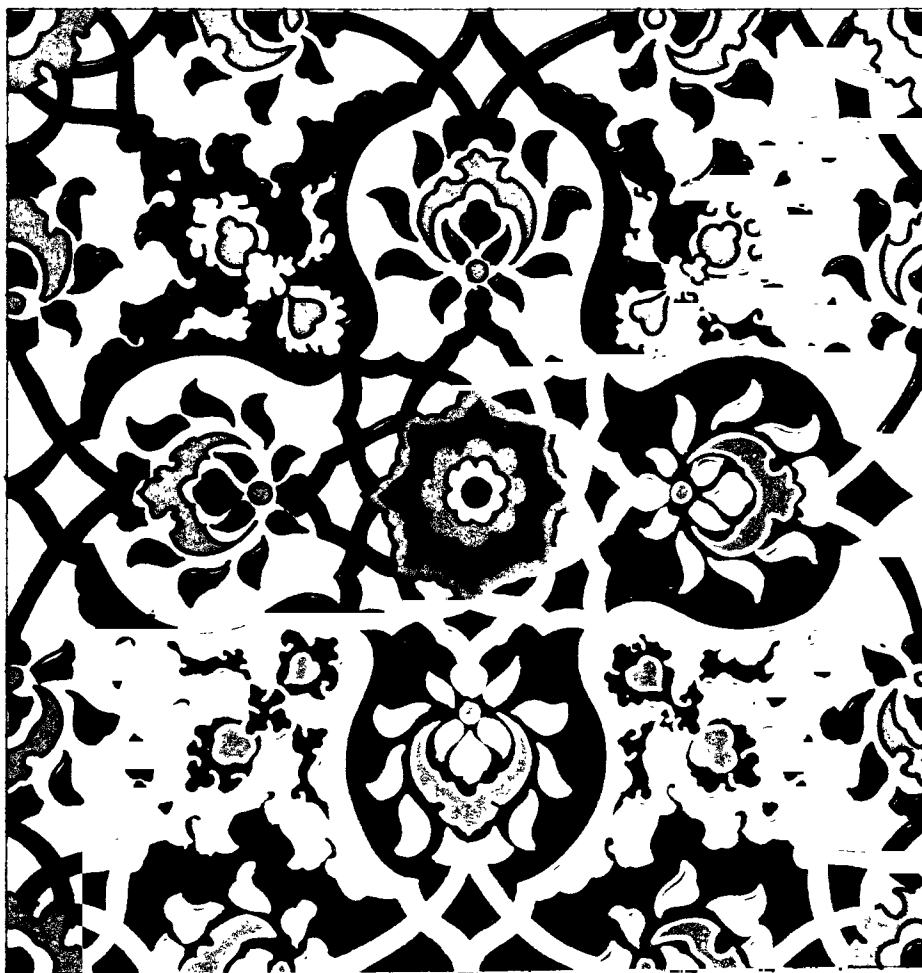


Fig. 27. Unit of decoration, arch of north portico
Scale 1:2



Figs. 29 and 30. Two varieties of pierced tiles for windows
Scales 1 : 1.91 (fig. 29), 1 : 1.8 (fig. 30)

Fig. 31. One of the spandrel designs
above arched windows of octagon
Scale 1 : 4



Figs. 32 and 33. Tiles that now form panels at feet of some of the piers between the windows of the octagon. Scale 1 : 2

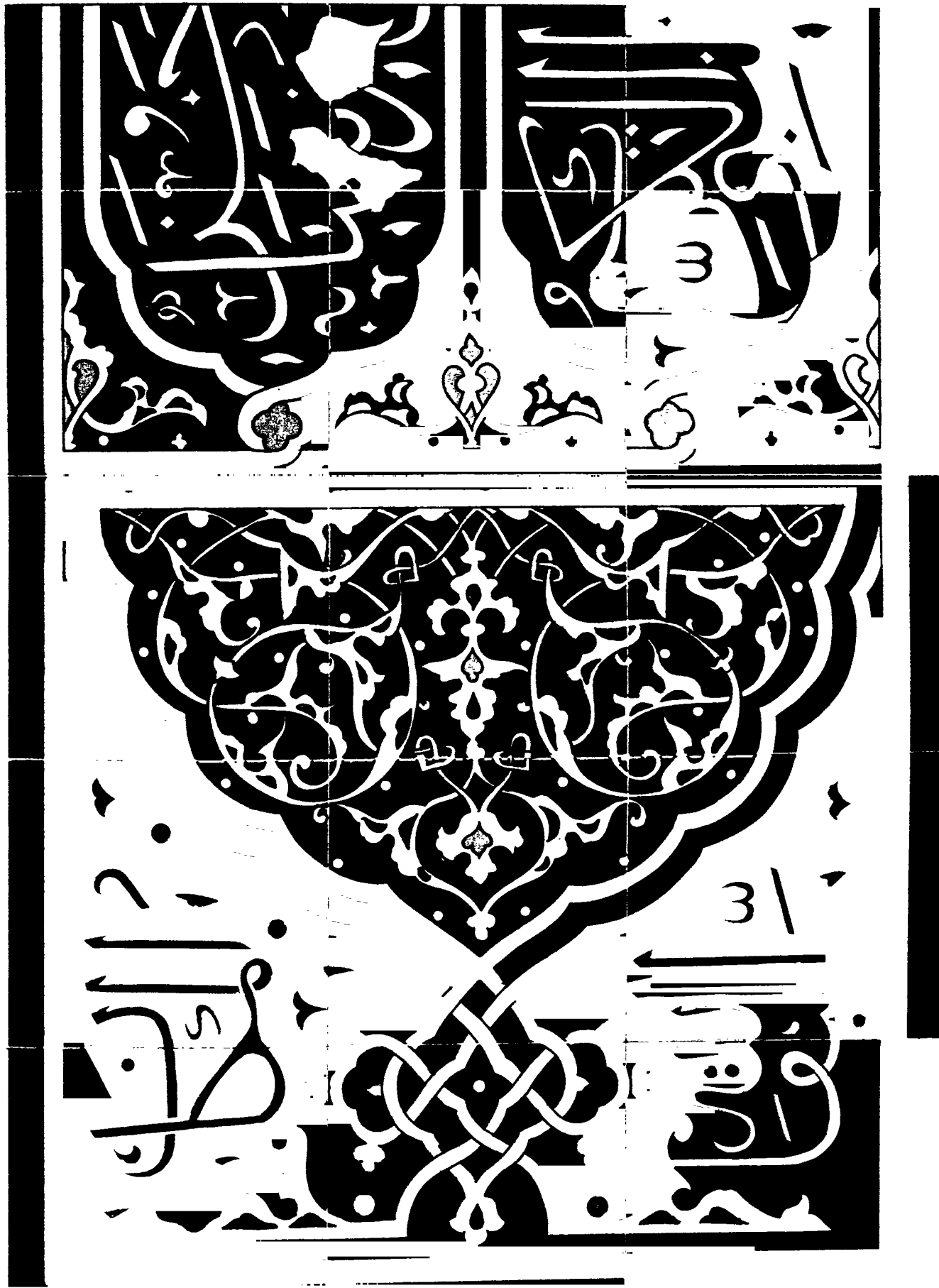


Fig. 34. Terminal decoration of a panel containing 73rd verse, chapter xxxix of the Koran
 See also page 98
 Scale 1 : 4

phases in the history of the tile decoration, and the transition from the enamelled tile to the glazed tile had been effected. If we are to believe the Arab author, Mujîr al Dîn¹, who wrote his history of Jerusalem in 1496, the upper part of the outer walls was then covered with mosaic (فصوص). It seems that Mujîr al Dîn was able to appreciate the difference between tiles and mosaic, for he uses the word قشاني (Qashâny) for tiles, a word derived from the town of Qashân in Persia famous for their manufacture. He uses this word in describing a Sheykh's chamber that stood in his day at the southern end of the raised platform on which is built the Dome of the Rock. The Sheykh's name was 'Abd al Malik al Mousuly and his dwelling was called the Hakourat al Qashâny² (the enclosure of tiles), so named after the manner of its decoration. If, then, we believe Mujîr al Dîn, the earliest tiles on the Dome of the Rock cannot well be earlier than the beginning of the sixteenth century. In 1512 Palestine was conquered by the Turks under Sultan Selîm. There is no inscription on the walls of the Dome of the Rock or of the Dome of the Chain, saying that his son Suleiman the Magnificent was the first to tile the walls. The inscriptions which refer to Suleiman's work, as, for example, the one over the north door of the Dome of the Rock and the one over the prayer niche in the Dome of the Chain, speak of repairs or rather renewals (جَدَّدَ). It is improbable that Sultan Selîm could have found time to attend to the repair of the shrine. He was busy with his wars. Nor, although there are reasons for believing the enamelled tiles to be older than the reign of Suleiman, is it necessary to attribute them to the reign of Selîm unless we feel bound to rely upon the accuracy

¹ 'Al Uns al jalîl bi târikh el Kuds wa'l khalîl,' p. 371, كتاب الانس الجليل.
بتاريخ القدس والخليل.

² Mujîr al Dîn's *History of Jerusalem and Hebron*, p. 376.

of Mujîr al Dîn's statement. But it is not perhaps impossible that Mujîr al Dîn was quoting what he had read in the writings of earlier authors rather than describing what he himself saw. It is known that enamelled earthenware was used in the Haram al Sharîf in the fifteenth century, for there are pieces of turquoise blue let into the stonework of a great porch built by Qaït Baï on the western side of the Haram; and in view of the great technical differences between the enamelled tiles and the glazed tiles known to date from the reign of Suleiman, as well as the great difference in the colour scheme that they represent, there is some temptation to believe that they were made not only before the reign of Suleiman but before that of his father Selîm. Some support is found for this view when it is remembered that the tiles on Turbé Yechil Djami at Brousa are of the same enamelled kind and that the Turbé dates from the first quarter of the fifteenth century. There seems to have been a link between the tile-makers who worked in Constantinople and Brousa and those who worked on the Dome of the Rock in Jerusalem, for similar if not identical designs are found in both places.

Whatever may be the date of the enamelled tiles, the evidence afforded by their successors the glazed tiles, already described as having been made during a period ending about 1561, shows that this period, though short, was of great activity and had successive phases of development, attainment, and decline. This period began at an unknown date, possibly between the year of the Turkish Conquest (1512) and the year 1528; possibly earlier. An inscription quoted by de Vogüé in his *Temple de Jérusalem* gives that year as the year when certain works were finished. What these works were the inscription does not say, but as the inscription was (it has now disappeared) on one of the coloured windows of the octagon, it referred presumably to those

windows; but there is no reason to doubt that the repair of the tiles had also been begun by then, to be continued perhaps till about 1561, the date over the prayer niche in the Dome of the Chain, or at least till 1552, the date over the north door of the Dome of the Rock. From this it seems that the work may have continued over a period of about thirty years (perhaps a little more than one generation of workers). During that time a school of tile-makers was probably more or less established in Jerusalem. For some time the work was done with great skill and intense devotion, but the later work shows a diminished enthusiasm.

§ 7. *The Craftsmen Employed*

That the workers were foreigners there can be no doubt. The work is entirely Persian in character. The inscription in the semicircular space above the outer door of the north portico is signed 'Abdullah at Tabrizi. The inscription shows according to Sheykh Amîn, one of the attendants at the shrine, that 'Abdullah was not a complete master of Arabic. An Armenian tile-maker from Kutahia informed the writer that the Chief of the Mevlevi sect at Konia said that whenever a work of art is signed by the name 'Abdullah, it may be taken to be the work of a Christian concealing his identity under a name equally applicable to men of all religions. It may be the case, then, that Armenians were also employed as they are known to have been employed during the nineteenth century. Moreover, Armenians have been for many centuries, and still are, engaged upon tile and pottery-work.

§ 8. *The Place of Manufacture*

It is known that tiles were made in the Haram al Sharîf in the eighteenth and early nineteenth centuries.

The furnaces still exist. The Sheykh Khalil al Dunuf, one of the Sheykhhs of the Dome of the Rock, himself remembers the existence of other furnaces in the Bâb al Dhahab. These furnaces are also mentioned in Herr Schick's pamphlet on the Haram al Sharîf. They were destroyed about 1872 when Sultan 'Abd al Azîz repaired the Dome of the Rock and other buildings of the Haram enclosure, including the Bab al Dhahab. Excavations in the neighbourhood of the Bab al Dhahab may bring to light fragments proving that it was in these furnaces that the tiles, made by Persian or Armenian workers in the first half of the sixteenth century, were fired.

§ 9. *The Third Period*

By the end of the sixteenth century the making of tiles had ceased in the Haram al Sharîf. For at this time, or early in the seventeenth century, there was an importation of tiles from abroad for carrying out the repairs that had become necessary. These tiles are of the type commonly known as 'Rhodian'. They are thinner than the locally made tiles. They show a highly perfected art. The draughtsmanship is very fine. The colours used are dark blue, light blue, green, a brownish black, white and a remarkably bright red. The designs are outlined in black sometimes covered with a second line in dark blue; the red is laid on very thickly so that the parts so coloured are raised above the rest of the tile's surface; the red rarely entirely fills the space within which it is laid, thus leaving a white line between it and the outline. The ground upon which the design is painted is usually white. The glaze is perfect. Very few of these tiles now remain on the building; none are found on the drum of the Dome, but there are a few on the walls of the octagon. In the chronological

diagrams these tiles are not distinguished by hatching. Two small panels of them can be seen on the north elevation in the band below the great inscription; on the piers of the north-east elevation are two panels of four tiles each, and there is one panel in the band below the inscription on the south façade. In addition to these, many fragments have been found and are now in the Haram Museum. These fragments are of tiles that formed large panels decorated with floral patterns. They may have been used for repairing the blind bays, two of which exist in each façade.

§ 10. *The Manner of Repair to the Tile Covering*

The tiles just described mark the beginning of a period which has lasted to the present day—a period of occasional patchwork repair. During this period little or no attempt seems to have been made to maintain the intention of the original designers. The object seems rather to have been to fill spaces as they became denuded with such tiles as were available or could be produced, mingling them with the older tiles which were redistributed and often mutilated so as to make them agree with the newer tiles in a more or less symmetrical and orderly combination. In this manner the original design has become more and more obscured, so that it is at least difficult, though perhaps not altogether impossible, to discover something of the original design. The attempts made to obtain, with tiles of different dates, symmetrical effects, are well illustrated in the chronological diagrams.

§ 11. *Fourth Period: Seventeenth Century and Early Eighteenth Century*

Of the tiles belonging to this period there are four kinds representing repair work done up to the end of the

seventeenth century and possibly well into the eighteenth century. The first of these consists in a leaf-and-flower design similar to that shown in Fig. 20, but much less coloured, blue and white being the only colours used. The design is in blue and the ground is white. The blue is not laid on with any particular care, and the marks of the brush can be seen; the white ground is slightly bluish. The drawing has lost the precision of the earlier work, nor is the blue the same blue as is found in that work. The glaze is still good. A very large number of these tiles are found on the building. They are to be seen in the panels decorating the band below the great inscription on the north-east, east, south-east, and south façades of the octagon; in the panels of the blind bays of the same façades and, mingled with early enamelled tiles, on the architrave of the south-east façade; there are some also on the wall of the drum.

Of the same period, or perhaps a little later, are two varieties of hexagonal tile: one with a black pattern on a green ground, and the other with a black pattern on a yellow ground (Fig. 37). In many of these tiles the glaze is not perfect, being cracked in many places. The substance of the tiles is reddish or yellowish and not white as that of the earlier glazed tiles. But among the small triangular tiles which are combined with the hexagons to make a star pattern are found several with a good glaze and other qualities characteristic of earlier work. It appears that these were not originally made as triangles, but have been cut out of earlier hexagonal tiles (Fig. 39) which were a good deal larger than their successors now on the walls. None of these larger hexagons remain on the building, but one badly mutilated specimen has been found in a store-room and is now in the Haram Museum. It is from this specimen that Fig. 39 has been drawn.

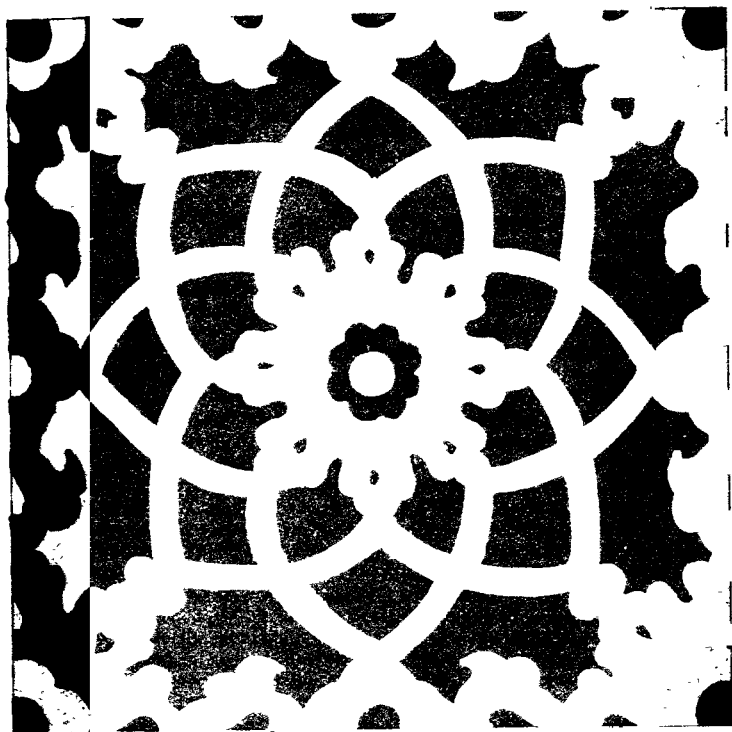


Fig. 35. Specimen of a design found in many varieties of colour
Scale 1 : 2

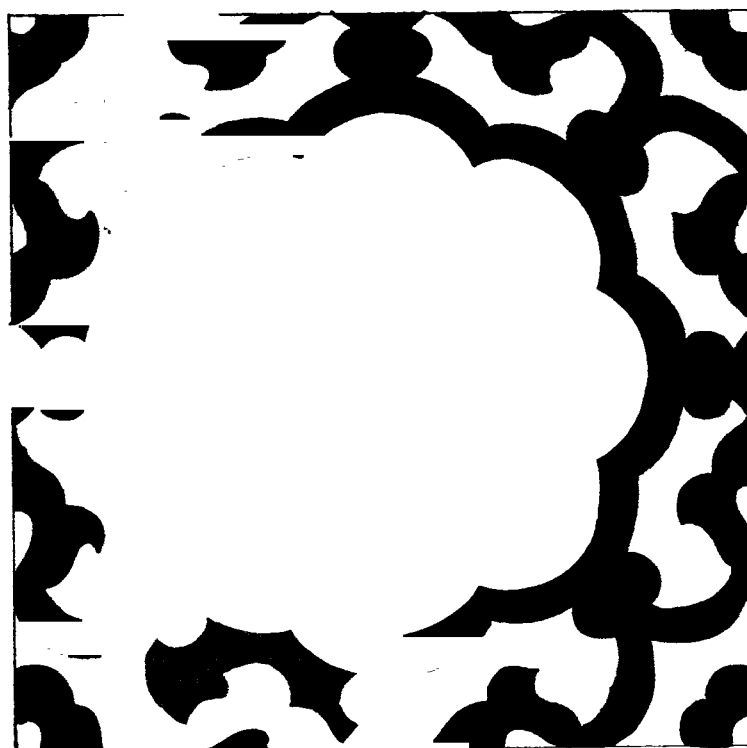


Fig. 36. Pierced tile for windows
Scale 1 : 2

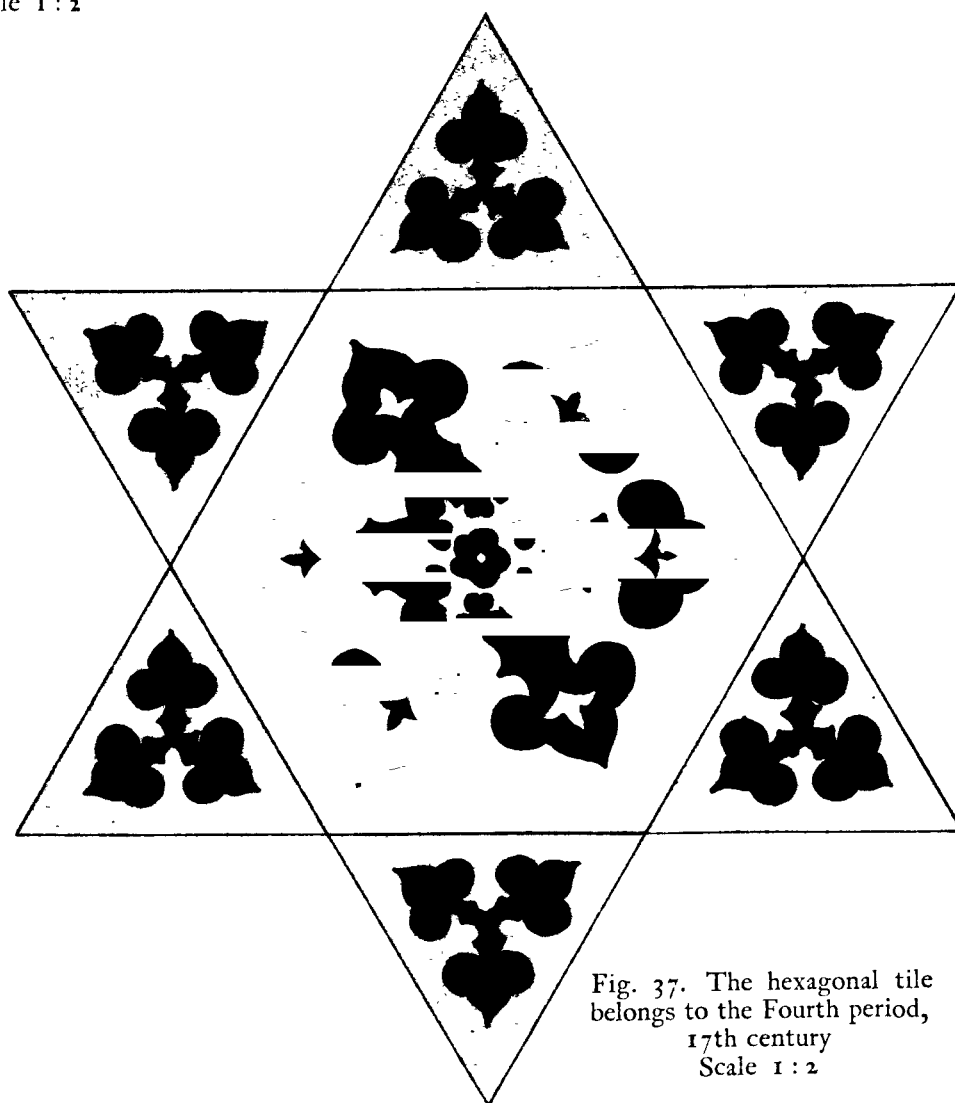


Fig. 37. The hexagonal tile belongs to the Fourth period,
17th century
Scale 1 : 2

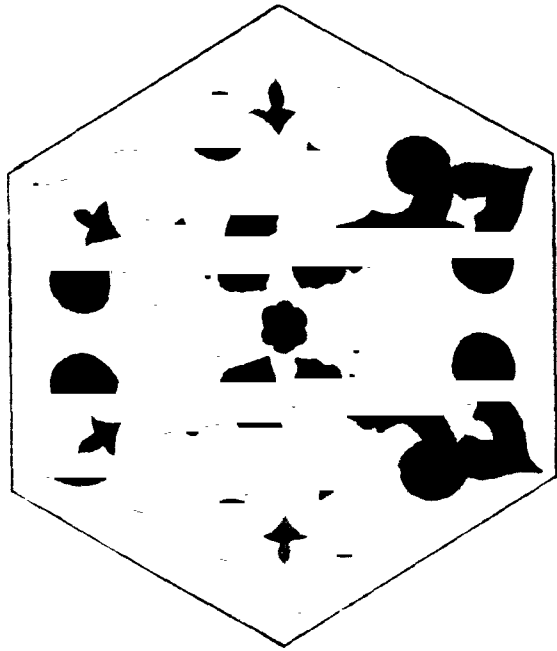


Fig. 38. Hexagonal
17th-century tile. 1 : 2

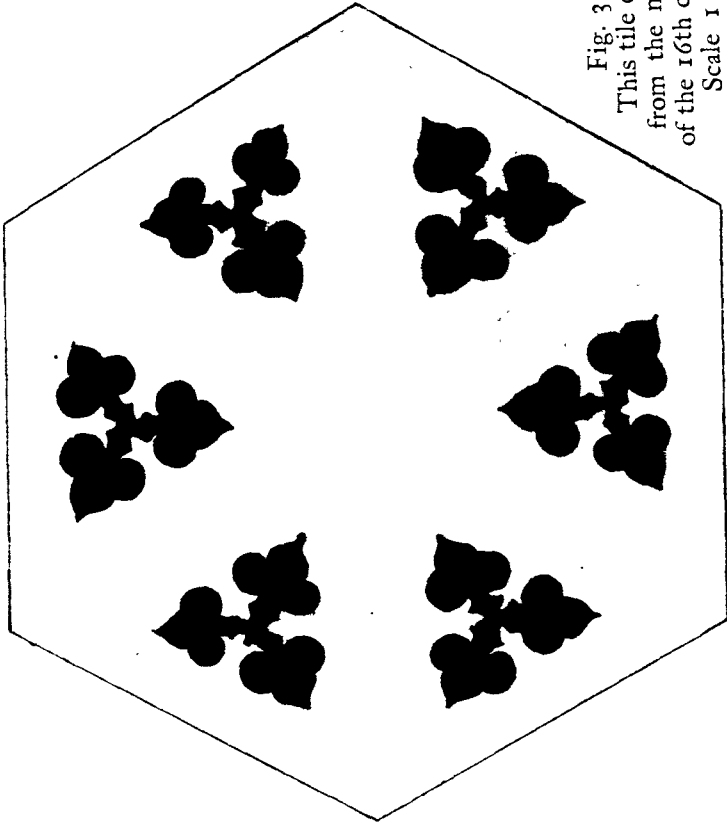


Fig. 39
This tile dates
from the middle
of the 16th century
Scale 1 : 2



Fig. 40. Detail of border below great inscription on parapet wall. See also Fig. 41
Scale 1 : 4

A few other fragments of this type are to be seen in the soffits of the arches of the Dome of the Chain and others reduced to triangular form are found on the Dome of the Rock. The tile from which Fig. 39 is drawn appears to belong to the period represented by Fig. 23, perhaps earlier. On the wall of the drum is found a third type of tile belonging to the seventeenth- and early eighteenth-century group. It has the leaf-and-flower design of which so many varieties have already been referred to. In this case the design is in blue on a white ground, but it differs from the last described variety of this design in that the leaf and flowers are outlined in black. The draughtsmanship shows a still further decline, and there is a tendency for the colour to overflow on to the white ground. In the Armenian Church of St. James are a number of tiles of similar pattern and colour, but rather more coarsely drawn. These are known to have been imported from Kutahia in Asia Minor and are dated 1727.

The last tiles belonging to this group are found used in a repair to the mosaic inscription round the drum. A good many other tiles of this repair have been collected and are now in the Museum. The colours are dark blue, white, turquoise, and black. The drawing is uncertain and the outline shaky. The glaze is far from perfect. The tiles show none of the mastery either in draughtsmanship or in technique of the great 'Ya Sîn' inscription of which the remains, as already said, have been collected and stored in the Haram Museum.

§ 12. *Fifth Period: Eighteenth and Early Nineteenth Century*

The tiles of this period are distinguished in the chronological diagrams. They belong to the eighteenth and early nineteenth centuries. We are here again on

firmer ground as to dates, for many of the early nineteenth-century tiles are dated. These tiles show that a very considerable effort to repair the tile covering was made and that the art of tile-making had fallen into complete decadence in every respect. The tiles are twisted and sometimes even cracked; the drawing is poor; the colours have mingled in the firing and the glaze is almost invariably 'crazed', i.e. covered with cracks. The secret, known to the earlier tile-makers, of attaining the proper coefficient of expansion between the body and the glaze, is lost. There are others of rather better workmanship which may perhaps be attributed to the middle of the eighteenth century. Among these are found, chiefly on the piers of the north façade, attempts to imitate the variations of the design shown in Fig. 35, and other imitations of the enamelled border shown in Fig. 16 and of the cross motive shown in Fig. 18. But, compared with the sixteenth-century work, the colours, the drawing, and the glaze are poor. Among the early nineteenth-century tiles also are imitations of a number of sixteenth-century designs. For instance, on the drum of the Dome in the band below the window-sills, are one or two tiles of the design shown in Fig. 23, and in the band below the 'Ya Sîn' inscription, on the south façade of the octagon, are a few tiles imitating Fig. 40; combined with an imitation of the central feature of Fig. 24. On the end piers of the south-east façade are imitations of Fig. 33, and the cornice was repaired with very poor imitations of Fig. 25. Imitations were also made of the sixteenth-century window borders. Tiles of the leaf-and-flower pattern, as well as enamelled bricks, were also reproduced in considerable numbers. The considerable effort made at this time to repair the tile decoration included not only the manufacture of a large number of new tiles, but also

ERRATA

Page 45, line 8, *for* $1233=1874$ *read* $1233=1818$

Page 51, line 9, *for* 43 bis *read* 51 bis

Richmond · *Dome of the Rock*

attempts to repair the tiles themselves. On the east side of the southern portico are to be seen tiles that, having lost in part their original glazing, were re-glazed and re-baked; the junction between the old and the new glazing is visible, and the newer work, both in colour and in glaze, has all the characteristics of early nineteenth-century work. The date of these works of repair is given on several tiles. It is A.H. 1233 (A.D. 1874). The tiles were all made in the Haram al Sharîf. The furnaces in which they were fired have been found in the building known as the 'Najâra'. This building lies to the east of the portico to the Aqsa Mosque, and, judging by the character of the masonry, is of twelfth-century Frank construction. In the furnaces and round them were found many tiles and fragments spoilt in the baking, as well as others that had turned out more successfully. All are now in the Haram Museum. In the middle of the eighteenth century there was an importation of tiles from Damascus. Of these a few hexagons and fragments of hexagons have been found, mostly in the 'Najâra', which was also used as a store. The design on these tiles is in blue (usually a flower) on a white ground. None of these are now found on the shrine.

§ 13. *Sixth Period : Late Nineteenth and Twentieth Century*

The tiles that belong to this period are shown in the chronological diagrams. Four types of tile are found in it. The first are tiles made in presses and of a fine white material. Their designs are imitated from the old designs, but the colours have not the quality of the old colours. The glaze is thin. The greatest difference between these tiles and any others that have preceded them is in their poor weather-resisting properties. The whole of the great

inscription round the octagon is of these tiles. By comparing one of them with a tile of the inscription that occupied the same position in the sixteenth century, the extent to which the art of tile-making had declined between 1550 and 1874 becomes strikingly apparent. The tiles made in 1874 are found for the most part on the more exposed façades. The inscription round the drum was repaired with these tiles from the north-west buttress round to the south-west buttress. The face of the south-west buttress is almost entirely covered by them. They cover also about half the north façade and the greater part of the north-west, west, and south-west façades of the octagon. Their date is given at the end of the great 'Ya Sîn' inscription. It is A.H. 1292 (A.D. 1874). According to local tradition these tiles were imported either from Constantinople or Europe. Many still living remember the occasion of the work.

An appreciable number of ordinary red Marseilles flooring tiles have also been used to fill gaps; for instance, on the south-west buttress of the drum and in the blind bays of the west and south-west façades. Red hollow bricks marked with the name of Roux Frères, Marseilles, are found in bands under the great inscription on the north-east, north-west, and east façades. Some tiles made probably about 1897 in Kutahia fill, in part, the blind bays of the west and south-west façades. The same make of tile is also found on the sides of the north portico. These tiles are of forms manufactured to serve as table-tops. They were used here presumably because no others were available. The guardians of the shrine state that they formed part of the repairs carried out in a very great hurry just before the German Emperor's well-remembered pilgrimage.

Lastly belonging to this group are some indescribably hideous tiles of European manufacture. Some of these

are in the blind bays of the west and south-west façades where they form borders to panels composed of fragments dating from 1874 jumbled together with the table-top tiles from Kutahia. Others are found on the sides of the northern portico.

§ 14. *Number of the Tiles and the Dates of their Present Setting*

There are about forty-five thousand tiles on the walls of the Dome of the Rock. Of these about thirty-two thousand are on the octagon and about thirteen thousand on the drum. Of the entire tile-covering about fourteen per cent. is of the early enamelled type; forty per cent. of the fine glazed kind of the sixteenth century; eleven per cent. is made up of seventeenth- and early eighteenth-century tiles; seven per cent. of later eighteenth- and early nineteenth-century tiles and twenty-eight per cent. of late nineteenth- and twentieth-century tiles.

These percentages are related, of course, only to the periods when the tiles were made. They have no relation to the periods when the tiles were set in their present positions. There is no doubt that most of the tiles, perhaps all of them, have been reset at one time or another and some of them on many occasions. It is hard to find any, except the more modern ones, that have not suffered from chiselling, especially is this true of the sixteenth-century tiles. Practically all of the enamelled tiles have also been reduced. Among the few tiles of the sixteenth century that have escaped chiselling are those forming the panels covered with Koranic inscriptions on the north-eastern façade and those forming one of the spandrels on the southern façade. Chiselling seems indeed to have been indulged in almost wantonly. It has had a very bad effect on the power of the tiles to resist weather, for it has

destroyed or shaken the glaze at the edges, thus starting a tendency to flake and enabling rain and frost to enter and continue the destruction. Where the sixteenth-century tiles have not been chiselled their condition is still perfect. If the mortar in which they were set had been capable of resisting the weather and of retaining the tiles on the wall, there is no reason why the tile-covering with which the building was clothed at least four hundred years ago should not have remained in perfect condition till to-day. The same could not be expected of the modern tiles, however good their mortar, for owing to their inferior character their surfaces are incapable of resisting the weather for long, and a large proportion of those made as recently as 1874 are already entirely denuded of their glaze and colour. The chiselling of the older tiles was no doubt done when they were reset, partly as a convenient alternative to calculating carefully the spacing needed and partly with the object of making tiles of different dates and slightly different sizes agree in their jointing. When the last reshaping and respacing took place can be determined approximately by examining each façade. For example, the panels between the windows of the drum on the east, north, and south-east sides are filled for the most part with a mixture of early enamelled tiles and sixteenth- and seventeenth-century glazed tiles. These have had to be cut down to make them aline with one another and so as to make, in combination, some approach to a symmetrical arrangement. The setting of these tiles cannot be earlier than the seventeenth century, but since among them are also found some tiles of the eighteenth century, the present setting may be as late as that century or it may even have been done still more recently. On the west side of the drum the setting dates at earliest from the late nineteenth century and the jumble of tiles in the band below the

windows was set about ten years ago. The writer has spoken with a man who was engaged upon the work. Among these tiles are tiles of all dates. The narrow strips, distinguishable on the chronological diagrams which illustrate this band, consist in very valuable sixteenth-century tiles belonging to the great 'Ya Sîn' inscription which encircled the walls of the octagon and of which about three-eighths are now in the Haram Museum.

Turning to the walls of the octagon, all the tiles on the parapet wall were set either during the late nineteenth century or during the present century. The same can be said of the parts below the cornice on the north, north-western, and south-western façades and the setting of the tiles on the other four façades dates for the most part to the great repair done in the early nineteenth century, while some of it is even more recent.

§ 15. *The Relation of the Present Design to the Original Design*

It is of interest to inquire to what extent was the resetting referred to in the last paragraph done in accordance with the intentions of those who made the original design.

(a) *The Drum.* There is no reason for doubting that the border pattern (Fig. 16) was made for the position it now occupies round the rectangular spaces formed by the windows of the drum. (See Figs. 43 to 50.) The masonry opening, behind the rectangular opening formed by the tile-covering, has a semicircular head, as have also the openings in the masonry that form the windows of the octagon. But, in the drum, this arched arrangement is not repeated by the tiles, for these form a horizontal lintel level with the top of the stone arch in the walling behind. Pierced tiles fill the rectangular opening, except

in the upper angles which are opposite the spandrels of the stone arch. These angles (Fig. 43) are filled with unpierced tiles of a design (Fig. 35) that appears to have been purposely made to agree in its general lines with that of the pierced tiles. This arrangement has been carefully thought out and has the appearance of original work or at least of the original intention.

As already pointed out the decoration of the panels between the windows is not original. (See Figs. 43 to 50 and 43 bis to 50 bis.) It is the outcome of conditions prevailing on the occasion of the last repair when those who did the work had to make the best use they could of the tiles of different dates and designs that were at their disposal. At a distance the effect is rather grey than coloured. But it is clear enough that the first object of those who designed the early tiles was to attain a highly coloured effect. There can be little doubt that these panels were filled with tiles of uniform design, the nature of which has already been discussed in the first section of this chapter. There is some evidence of the original design for the decoration of the band below the windows of the drum. This band is of a depth to accommodate four rows of tiles. The two middle rows were of the border pattern (Fig. 16) and the outer rows were of squares of turquoise blue. Of this arrangement something still remains on the north side of the drum (Fig. 43).

(b) *The parapet wall.* The many repairs that have been carried out to the tile-covering of the octagon (Figs. 51 to 66) have obscured the original design, both in its main architectural lines and in the arrangement of the tiles within those lines. It is the parapet wall that has suffered most severely. Here the original horizontal divisions have been almost entirely lost, and the present arrangement of the tiles in no way reflects the original

intention, except in so far as it was a part of that intention to furnish the parapet wall with a great Koranic inscription. The actual inscription dates, as has been seen, from 1874. At its end on the south-east façade are the following words:

‘Written by the Sayyid Muhammed Shafîk. May God
pardon him—1292.’ (A. D. 1874.)

The design in small panels in the bands above and below the inscription is clearly not the original design. Reference to the chronological diagrams (Figs. 43 bis to 66 bis) shows that the decoration is made up of tiles of different dates. On the north façade there are a few panels filled with badly mutilated sixteenth-century tiles placed in their wrong order and containing fragments of a great floral pattern; there are two panels of early seventeenth-century ‘Rhodian’ tiles also badly cut down; the rest of the panels are either of early or late nineteenth-century tiles; even many of these have suffered severely from chiselling. On the parapet wall of the north-west façade the tiles are either of the early or the late nineteenth century, many of them mutilated. On the west, with the exception of one panel of early nineteenth-century tiles, all date from the late nineteenth century. On the south-west parapet there are a few of the early nineteenth century, the rest being of the late nineteenth century. On the south the parapet wall contains a greater variety of tiles; there is one panel of ‘Rhodian’, a very few scattered sixteenth-century tiles, some badly mutilated seventeenth-century tiles, a few of the late nineteenth century and the rest of the early nineteenth century. On the south-east side there are the fine but terribly mutilated tiles of the sixteenth century already described in § 2 of this chapter. (See also Figs. 57 and 58.) The panels in the band below the inscription on this façade are mostly filled with

seventeenth-century tiles and the borders of the panels are made up of sixteenth- and early nineteenth-century tiles. The centre panels decorated with a star pattern are of the early nineteenth century. On the east façade the upper band is almost entirely filled with late nineteenth-century work, while on the lower band is a mixture of sixteenth-, seventeenth-, and early nineteenth-century tiles. On the north-east façade (Figs. 53 and 54) the panels of the upper band contain mostly early nineteenth-century tiles and those of the lower band seventeenth-century tiles enclosed in borders of early nineteenth-century tiles with a few of the sixteenth century.

Many of the tiles on the parapet wall are set in cement mortar and the existence of the courses of hollow red Marseilles bricks already referred to shows that much of the actual setting is of recent date. The man who did a good deal of the work was called Hamed al Banna (Hamed the builder); both he and his work are still well remembered. A characteristic of his work is a liberal use of cement. This he splashed about in all directions. Some of it has got into the hair cracks in the glazing of the early nineteenth-century tiles and has destroyed what of brilliance they once possessed. This is particularly noticeable on the parapet wall on the south façade. (Figs. 59 and 60.)

Except the tiles bearing the designs shown on Figs. 23 and 41 there are, in the parapet wall, no tiles of a design clearly intended for such a position and calculated to tell at such a distance from the eye. The pattern that encloses many of the panels is the same as that which surrounds the windows of the octagon, a pattern that is lost at so great a height as the parapet wall. Nor are the tiles within the panels of designs with any particular relevance to their positions. This treatment of the parapet wall by means of panels existed as early as 1842, for it is

seen in an illustration of the building contained in *The Holy Land* by David Roberts, R.A., published in that year. The original design had already been lost in the early nineteenth century. In the middle of the lower band on the south façade (Figs. 59 and 60) are some early nineteenth-century tiles that give a clue to the design then adopted for this band, at least on this façade. These tiles give also an interesting illustration of the extent to which tradition in design had been lost and of how little the sixteenth-century designs were appreciated in the beginning of the nineteenth century. For the tiles show an unskilful combination of two sixteenth-century designs of altogether different scales. The central feature of the design illustrated in Fig. 24 (a design that decorates the lintel of the southern door and one made to be seen at no great distance from the eye) has been combined on the same group of tiles with the design shown on Fig. 40, which is to a much larger scale and is made to tell at a greater distance. The central feature of the lintel design has been made into a panel from the sides of which the scroll illustrated by Fig. 40 starts to the right and to the left. This scroll was evidently continued by the early nineteenth-century restorers along the lower band and was bordered by reproductions of the pattern shown in Fig. 21. It is unlikely that this scheme was continued all round the octagon, because on the neighbouring south-east façade (Figs. 57 and 58) there is a big star pattern of early nineteenth-century work in the middle of the lower band. It is more likely then that this band was decorated by the early nineteenth-century restorers in a different manner for the various façades. But the use of the design shown on Fig. 40 may point to a knowledge on the part of the restorers that it originally formed part of the parapet wall decoration, though they did not work out with any

particular care the manner of its use. It is possible, then, that the panel treatment of the parapet wall was introduced sometime between 1842 and the early nineteenth century, say 1818, the date found on many tiles, and that at an earlier period there was a design for the parapet wall that included as one of its elements the pattern shown on Fig. 40 a pattern which, in view of its scale, is well adapted for a position so far from the eye. The tiles of this design are $20\frac{1}{2}$ centimetres wide and 23 centimetres high. A second element in the design was without doubt the battlemented pattern shown in Fig. 23 and already described in the second section of this chapter. The tiles forming this pattern are 25 centimetres square. A third element was the great sixteenth-century Koranic inscription already described and referred to as having been found in the store-houses of the Haram. This inscription, the remains of which are in the Haram Museum, is made up of three rows of tiles 25 centimetres square and one row $10\frac{1}{2}$ centimetres high and 25 centimetres long. A fourth element probably consisted in a row of glazed bricks set on edge above the cornice. A row of such bricks is found below the cornice, and, as is seen everywhere, they were used to mark structural lines. These bricks are 10 centimetres high. A fifth element was probably a band of tiles ornamented with the great floral pattern seen to a small scale in Fig. 41. These tiles have already been described in § 2. If these elements are superimposed and separated from one another by turquoise-coloured tiles of the thickness (3 centimetres) found in many parts of the building, the total height of the composition is $249\frac{1}{2}$ centimetres. The height of the parapet wall from the top of the cornice to the top of the highest blue band is 250 centimetres, a difference of $\frac{1}{2}$ centimetre, which is accounted for by jointing.

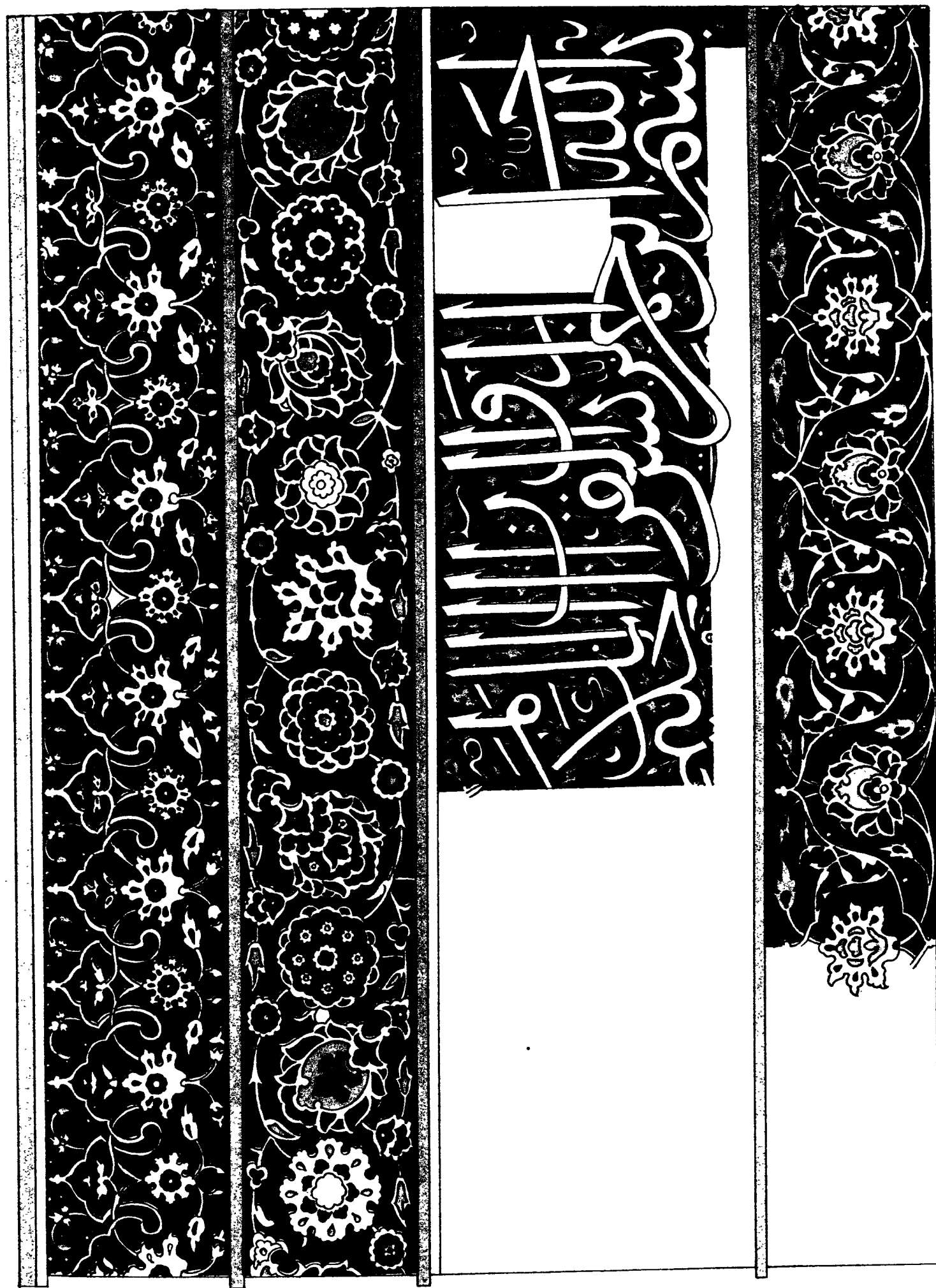


Fig. 41. Parapet wall: suggested arrangement of the tile decoration in the early 16th century

Scale 1:12.5

It is suggested then that the sixteenth-century design for the parapet wall was the design shown on Fig. 41.

There can be no doubt about the top band of battlements, or about the inscription, and it is difficult to remain in uncertainty about the two bands of flowers when it is remembered not only that their size and their scale fit them for the position suggested, but also that there is no other position for which they are fitted.

This design gives similar treatment to each of the eight sides of the octagon as well as continuity and unity of treatment for the octagon as a whole. The battlemented top band, the inscription and the two floral borders run uninterruptedly round the whole octagon. The design for the decoration of the parapet wall is treated as a single problem.

(c) *The walls of the octagon below the parapet.* An examination of the tile decoration below the parapet shows how the repairs that have been carried out from time to time as they became necessary on the several sides of the octagon have to a large extent resulted in the destruction of unity in the design.

The weather does not attack all sides of the octagon with the same severity. None consequently needs the same degree nor the same kind of repair at any given moment. In the absence of a permanent school of tile-makers, defects have had to be remedied either at longish intervals when new tiles could be brought in or made to replace those that had fallen, or with such materials as happened to be available from previously executed work. The situation to-day is no doubt typical of what has occurred in the past on many occasions. There are actually a number of gaps in the tile facing; there are also a number of tiles of different shapes, dates, sizes, qualities, and designs left over from previous works. If those who are now

responsible for the building were to proceed as many of their predecessors have proceeded, they would use these tiles to fill the gaps, and in order that there should not be too glaring a demarcation between the newly set tiles and those bordering the denuded spaces, the tiles actually in place would be taken down and re-grouped with those available from the store in such a manner as to make as symmetrical an arrangement as possible. Owing to the many different designs available and the fewness of the tiles of any given design it would be necessary to divide spaces into a number of small panels each containing a few tiles, it would also be necessary to do a good deal of chiselling in order to make the tiles fit. The repeated use of such methods has brought about the result we see to-day. The eight façades have become disconnected. Each is treated as a separate unit without neighbours; and, as time goes on, it becomes increasingly difficult to discover the principles of design that guided the original artists, who, no doubt, approached the problem of decorating the octagon as a single question, not as eight separate questions, as a problem to be solved in a broad and simple manner, with unity in its main lines and variety in its detail, giving the maximum effect without monotony and without the confusion that arises from unnecessary complexities of intention. How far each façade has now become divorced from its neighbours is well illustrated by comparing the decoration of the two faces of any angle pier of the octagon. No two contiguous faces correspond; and while restorers have sought to give the same design to the respective surfaces of the end piers (far removed though they are from one another) yet the conditions under which the repairs have been carried out (one façade being treated by itself) have prevented similar treatment being given to the contiguous surfaces of any angle pier.

The architectural lines of the design below the cornice have also suffered from the conditions governing repairs, though they have suffered, on the whole, less than the decoration enclosed by them. The main elements in the design are three: piers, architrave, and, within the rectangles formed by the piers and the architrave, arches springing from their own quoins which are slightly recessed behind those of the piers. Enamelled bricks outline the piers, architrave, and arches. This arrangement is common to six of the eight façades. The exceptions are the northern and north-western (Figs. 51, 52, 65 and 66). On these two façades the arches spring direct from the quoins of the piers which do not, in consequence, continue upwards until they meet the architrave as on the other façades. About half the number of enamelled bricks are needed for this treatment. The setting of the tiles on the northern and north-western façades, as well as those on the western and south-western façades, dates at the earliest from the last quarter of the nineteenth century, though much of it is of still more recent date. The work was done during the reign of Sultan 'Abd al Azîz about 1874. Belonging to that period there are, on the walls of the octagon alone, more than eleven thousand tiles. No enamelled bricks, however, were made, at least none have been found of that date. For these the restorers relied on finding a sufficient quantity among those that had been made in the sixteenth and early nineteenth centuries. But the supply evidently proved insufficient and many economies had to be made. Consequently on the north and north-west façades no separate quoins were used to outline the piers as distinct from those that carry the arches, nor was the architrave, on these two façades, outlined as it is on the others by enamelled bricks. On the other three façades that are furnished with porches, there is in the middle

blind bay above the porch a nearly semicircular arch. Above the northern porch there is now no arch. But that one existed prior to the 1874 repair is shown by the illustration of this façade in de Vogüé's *Temple de Jérusalem*, published in 1864. Enamelled bricks were needed for the construction of this arch and their absence no doubt caused its omission. On the east and south façades (Figs. 55, 56, 59 and 60) the architrave above this middle arch is decorated by inscriptions. There was the same arrangement on the north façade. The inscription still exists, but is no longer in its original position on the architrave immediately under the cornice, but about 45 centimetres lower, where it covers a good deal of the space formerly occupied by the arch (Figs. 51 and 52). Between the cornice and this inscription, and running the whole length of the northern façade at this level is a band of sixteenth-century tiles ornamented with the design shown on Fig. 40. This pattern is not deep enough to fill the whole depth between the cornice and the tops of the arches over the windows, thus making an architrave comparable to the one that exists on the other six façades. These tiles can never have been intended for this position. It has already been shown that they belong to the parapet wall. They were set in their present position because the tiles happened to be available and the space had to be filled with something. Nevertheless they provide an architrave, though a narrow one, and the tile decoration of the piers is taken up to it. The spandrels of some of the arches are of sixteenth-century tiles set, however, without much attention to their design. Owing to the narrowness of the architrave, there is an awkward space between it and the spandrels (Figs. 51 and 52). This space is filled with odds and ends of mutilated tiles of various dates. On the piers of this north façade are found tiles of every

century from the sixteenth to the nineteenth. All are chiselled down and combined in some sort of symmetrical pattern (Figs. 51 and 52).

In reconstructing the tile decoration of the north-western façade in 1874 similar economies in the use of enamelled bricks were made as for the northern façade. The architrave of the north-western façade (Figs. 65 and 66) is rather more than the original depth. The tiles decorating it date from the last quarter of the nineteenth century and the few that still remain on the piers and other spaces are practically all of the same date.

Prior to 1874 there can be no doubt that these two façades, the northern and the north-western, agreed in their architectural lines with the other corresponding façades.

It cannot be said of any of the façades that the spacing between the enamelled brick quoins of the piers and the architrave is exactly as originally set out, for just as the tiles have been re-set on more than one occasion, so also have the quoins, though perhaps not so often. Therefore in attempting to discover the original design we cannot rely on the results of a comparison between the sizes of any spaces that now exist within the architectural lines given by the enamelled bricks, and the sizes of the sixteenth-century tiles that may have filled the piers or architraves as originally set out. Repairers of various periods seem to have been satisfied with reproducing the original architectural lines in a manner representing more or less roughly the general idea of the original intention, rather than with reproducing exactly the original spacing. In their choice of tiles to fill the spaces enclosed by the enamelled bricks they were no doubt influenced by what had previously existed. If, for instance, hexagonal tiles had filled architrave or pier they would, so far as available materials allowed, redecorate in the same manner, chiselling

down the old tiles to make them agree with the new spacing between the enamelled bricks and with any tiles of a different period or size which, owing to a lack of the original tiles, it became necessary to introduce. The various small panels, consisting of tiles of different dates, that now decorate piers and architraves, are thus accounted for. In this connexion it is worth while paying particular attention to the hexagonal tiles. These tiles have already been referred to in § II. They provide to a large extent the decoration of the architraves and to some extent of the piers. Few, if any, are of the sixteenth century. They belong rather to a seventeenth-century repair. They are combined with tiles of triangular shape forming a star pattern (Fig. 37). The hexagonal tiles are $14\frac{1}{2}$ centimetres wide. They are decorated with a black pattern on either a yellow or a green ground. If the ground colour of the hexagon is yellow, that of the triangles used with it is green and vice versa. It has already been pointed out in § II that many of the green triangles seem to have been cut from larger hexagons of an earlier date. These larger hexagons were about $19\frac{1}{4}$ centimetres wide (Fig. 39). It is suggested that when repairs became necessary in the seventeenth century there were no longer available enough of these large hexagons, and that those that remained no longer fitted the spacing resulting from resetting the enamelled bricks. It was decided therefore to make new hexagons and it was found economical and convenient to reduce the number of new hexagons needed by utilizing such of the old hexagons as remained by cutting them into triangles so that each triangle found itself decorated with one unit of the little leaf pattern (Figs. 37 and 39) that decorated the hexagons. Thus even the damaged hexagons could be made use of. The size of the triangles determined the size of the new hexagons to be made. They proved

a good deal smaller than the old ones. Any discrepancy between the resulting combination of hexagons and triangles and the space they were to fill, either in architrave or pier, was filled up with white or blue strips cut from older tiles. No triangles of sides equal in length to those of the larger hexagons have been found. The original decoration then of the piers and architraves may have consisted in the large green hexagons without triangles and separated by a white or blue fillet as in the Yéchil Djamé at Brousa. Whatever may have been the treatment of piers and architrave it is probable that both were treated in the same manner making a uniform frame of rectangular shape outside the arches of the windows. The horizontal line of enamelled bricks that at present in so many places divides the piers from the architrave is out of character with the Persian work to which the tile decoration is intimately related, nor could it have been a part of the design of the Persian artists who first clothed the Dome of the Rock in tiles. This division of pier from architrave is no doubt due to the same causes that have already been referred to as tending to subdivide large spaces into smaller spaces. But the tradition of a continuous treatment for piers and architrave still survives to a small extent and is seen in the middle and end bays of the north-east façade. On some façades, perhaps on all, panels containing Koranic inscriptions were set above the windows in the architrave. On the north-east (Figs. 53, 54) façade there are six panels of very fine sixteenth-century tiles bearing Koranic inscriptions. Four of these are above the windows and two are under the arches of the blind bays at the ends of the façade. These inscriptions are read consecutively, each forming a part of one text. The text begins, on the panel under the arch of the northernmost blind bay, with the words 'God said . . .', then follow the eighteenth, nine-

teenth and twentieth verses of the Surat al Towba. A seventh panel, completing the text, is on the neighbouring east façade under the arch of the northernmost blind bay. These seven panels were never intended to be put at different levels as they are now placed. They should all be on the same level, and there is no position so suitable for them as that which four of them now occupy, in the architrave above the arches, each of the seven arches of this façade having one panel above it, the panels being set, of course, in their right order.

In the blind bays of the north-east façade (Figs. 53 and 54) are four lengths (two in each bay) of tiles decorated with the pattern shown in Fig. 40. The tiles have been severely cut down to squeeze them into the position they occupy but for which they were never designed. This design formed, as has already been shown, part of the decoration of the parapet wall. To place a design of this scale next to a design on the delicate scale shown in Fig. 33 is not a procedure that would have been followed by those who designed these tiles in the sixteenth century.

It is noticed that a small panel of four square tiles is a common termination to the piers. This may be a repetition of the sixteenth-century design. The delicate design just referred to and illustrated in Fig. 33 forms some of these panels at the feet of the piers. They are clearly intended to fill a position near the eye. These tiles have been reduced by chiselling. They seem to have been about 25 centimetres square. If we assume that they were intended to decorate the feet of the piers, they may provide a clue to the original width of the piers. A pier 50 centimetres wide between the inner edges of the enamelled brick quoins would accommodate at its foot a panel of four such tiles, two tiles wide. The width above this panel could

be filled very conveniently with the large hexagons already described and divided and surrounded by a blue or white fillet.

It has already been shown that hexagonal tiles still play a large part in the decoration of piers and architrave. But, in the architraves of some of the façades, square tiles with horizontal joints are also found, as on the north-east façade, where square tiles flank the panels with inscriptions that decorate the architrave, again on the east façade where they form in the architrave small panels above the piers, while on the architrave of the south façade square seventeenth-century tiles are combined diagonally with triangular shaped tiles cut from very fine early square enamelled tiles producing in combination a chequered effect.

The use of square tiles in some of the architraves may reflect a tradition to which it is worth paying attention. It is possible that, during the period (? fifteenth century) when it is perhaps permissible to believe the building to have been entirely decorated on the high scale of colour represented by the enamelled tiles, nothing but square tiles were made; and that both architraves and piers were decorated with such tiles. The chequer or diamond shaped design formed by the tiles on the architrave of the south-east façade (Figs. 57 and 58) may be the outcome of a recollection by the repairers that this architrave was formerly covered with enamelled tiles of the pattern shown in Fig. 20. If two rows of these tiles are laid together a series of blue diamonds divided by black triangles is produced, both blue and black being relieved by white flowers. The diagonal setting of square tiles is also frequent in the piers. The architraves and the corner piers as well as the piers flanking the central bays of those façades that are provided with porticoes, are, for the most part, decorated with hexagonal tiles, but the piers are to a large extent covered with square tiles set diagonally.

If the shrine was, as seems possible, first decorated with tiles in the fifteenth century, Suleiman the Magnificent no doubt found the decorations, in the first quarter of the sixteenth century, in a pretty bad state of repair. By then many of the enamelled tiles that composed its decoration would have fallen. The decoration round the drum which is still to a large extent made up of enamelled tiles, is likely to have been in a better state than that of the octagon. His work on the drum, then, probably consisted in filling in gaps. The decoration of the parapet wall of the octagon, being much less protected, probably needed complete renewal. The new tiles made by Suleiman's artists for this parapet have already been described. They are illustrated in Fig. 41.

These designs, so similar in their motives to the floral motive found on the earlier enamelled tiles, may well be a reproduction by Suleiman's workers of the former fifteenth-century designs, but without the high colour scheme of the latter. By colouring in turquoise blue the stems left white by the sixteenth-century artists and by colouring some of the flowers yellow, the colour effect could be brought up to that of the earlier enamelled tiles. For some reason, perhaps connected with the technical limitations of the glazed system employed, it may have been found necessary to reduce the number of colours used on any one tile. Hence the lowered colour scheme. The inscription round the parapet wall had also probably either entirely disappeared by Suleiman's time or had reached such a stage of dilapidation as to be difficult to decipher. This inscription was probably, like that still round the drum of the dome, in mosaics, and for the same reasons. These reasons have already been discussed in § 3. Whether it was the 'Ya Sîn' chapter of the Koran that formed this inscription may be doubted. There is some reason for believing that it was com-

posed of the last ninety verses of the chapter called 'the Night Journey'.

The mosaic inscription round the drum consists in a part of this chapter and ends quite suddenly at the word 'believer' half way through the twentieth verse. The sentence in which this word occurs is not even completed. There are one hundred and eleven verses altogether in this chapter. It would, then, seem likely that the chapter was completed round the octagon instead of the present 'Ya Sîn' inscription, which of course was copied from Suleiman's 'Ya Sîn' inscription. In the 'Ya Sîn' are eighty-three verses. To complete 'the Night Journey' space for ninety verses is required. The octagon would supply this if the words were spaced in the compact manner in which they are spaced for the first twenty verses round the drum. Suleiman's 'Ya Sîn' inscription is much less compactly spaced than the mosaic inscription. It is not likely that the careful workers, who made the mosaic inscription round the drum would have chosen a text of a length unsuitable for the space they wished to decorate. The chapter called 'the Night Journey' is not only of a suitable length to occupy the drum and the octagon, beginning on the drum and ending on the octagon, but also very appropriate for the Dome of the Rock; for it begins, 'Glory be to Him who carried his servant by night from the sacred temple of Mecca to the temple that is more remote whose precinct we have blessed, that we might show him our signs!' The Temple that is more remote is, of course, the sanctuary at Jerusalem whither the Prophet made his night journey from Mecca, and whence on the back of Borak and accompanied by the Archangel Gabriel, he passed through the seven Heavens to the throne of God. The 'Ya Sîn' chapter is very commonly found in the inscriptions decorating Mosques. Suleiman's Persian artists had

often doubtless employed it before they came to Jerusalem. Hence without further inquiry they put it round the octagon in place of the dilapidated, and perhaps undecipherable, mosaic inscription containing the last ninety verses of 'the Night Journey'.

The cornice also, from its nature, is likely to have needed complete renewal. It also shows a reduced colour scheme. On the walls below the cornice it is likely that many of the former enamelled tiles were still in place in Suleiman's time. These, it is suggested, were regrouped and combined with tiles made by Suleiman's workers just as so often has been done by subsequent repairers up to the present day, though no doubt with greater skill and care than in more recent times, but not to the extent of providing complete unity of design for the whole building, a unity which the building has probably not possessed since it was first covered with tiles.

The highly coloured effect of the enamelled tiles recalls something of the brilliance that the building must have had when covered with the mosaics which are known to have decorated it prior to its being clothed with tiles. The enamelled tiles, indeed, have almost the look of mosaic work. Their designs might well be carried out in mosaic and it may even be that Mujîr al Dîn mistook them for mosaics. The inscriptions that he saw were in fact in mosaic though a mosaic of faience and not of glass.

It has already been shown that on the north-eastern façade the blind bays are filled with tiles of different dates and also, in part at least, with tiles that were not intended by their designers for the spaces they now occupy. An examination of the blind bays of the other façades shows a similar state of affairs. Nevertheless there are certain features in the present arrangement that, if tradition is to be relied upon, may provide a guide towards discovering the main lines at least of the original intention. For

instance, on five out of the eight façades there are inscriptions under the arches of the blind bays; several of them contain also an arrangement of three small panels above the level of the spring of the arches, and on others there are traces of a stepped arrangement of the tiles made with the object of filling the space. Most of the blind bays are bordered with tiles of the same pattern as those that border the windows. On the east, south-east, and south façades some of the piers are separated from the architrave by panels containing one or other of the following inscriptions: لا اله الا الله حقًا or لا اله الا الله ايمانًا وصدقًا: 'There is no god but God in faith and in truth' or 'There is no god but God, verily, verily'.

These tiles have all been cut down to make them fit their positions in between the brick quoins. They were never intended to occupy these positions. They interrupt the continuity of pier and architrave. Under the arch of the southern blind bay of the eastern façade is a similar panel that has not been mutilated or only to a small extent. It measures 25 centimetres high by 59 centimetres long. It is suggested that all these inscriptions were made for the blind bays, though possibly not all the blind bays were furnished with them. How they were combined with other tiles is not clear. Judging by their depth, it seems likely that laterally the large tiles shown in Figs. 32 and 33 may have been combined with them. There are other inscriptions which, judging by the scale of their lettering, are not in the positions for which they were designed. On the main wall above the eastern porch are two panels each measuring $34\frac{1}{2}$ centimetres high by 39 centimetres wide and containing the saying of the Prophet:

انا مدينة العلم و علي بابها

'I am the city of knowledge and 'Ali is the gate thereof.'

The lettering of these inscriptions is on the same scale as that of the others just described. They also may have been designed for the blind bays, their present place being filled by tiles bearing inscriptions with larger letters. Above two piers on the eastern façade are two such inscriptions in square panels, each contains the words *الله الباقي* 'God the Everlasting'.

On the north-eastern façade two of the windows have enamelled quoins, aubergine in colour and three have quoins of turquoise-blue. In the original design there was no doubt a relationship between the colour of the quoins and the colour of the pierced tiles filling the window openings. For instance, if a window had aubergine quoins it could be filled with pierced tiles having a design in black on a turquoise ground (Fig. 36) in white on a deep blue ground or in black on a yellow ground; while windows surrounded with turquoise-coloured bricks could be filled with any of these varieties except black on a turquoise ground. The present arrangement of the pierced tiles is haphazard and has been effected without reference to the designs on them or to their colours.

§ 16. *Conjectural Restoration of the North Façade*

In this restoration (Fig. 42) both fifteenth- and sixteenth-century tiles have been used. The illustration is intended to represent what this façade might have been like after the great repair carried out in the first half of the sixteenth century. The parapet wall is covered with sixteenth-century tiles, set in four bands; at the top a battlemented band and between the battlements and the cornice, the great Ya Sîn inscription of Suleiman the Magnificent bordered at the top and at the bottom with great floral scrolls. The cornice, the piers, and

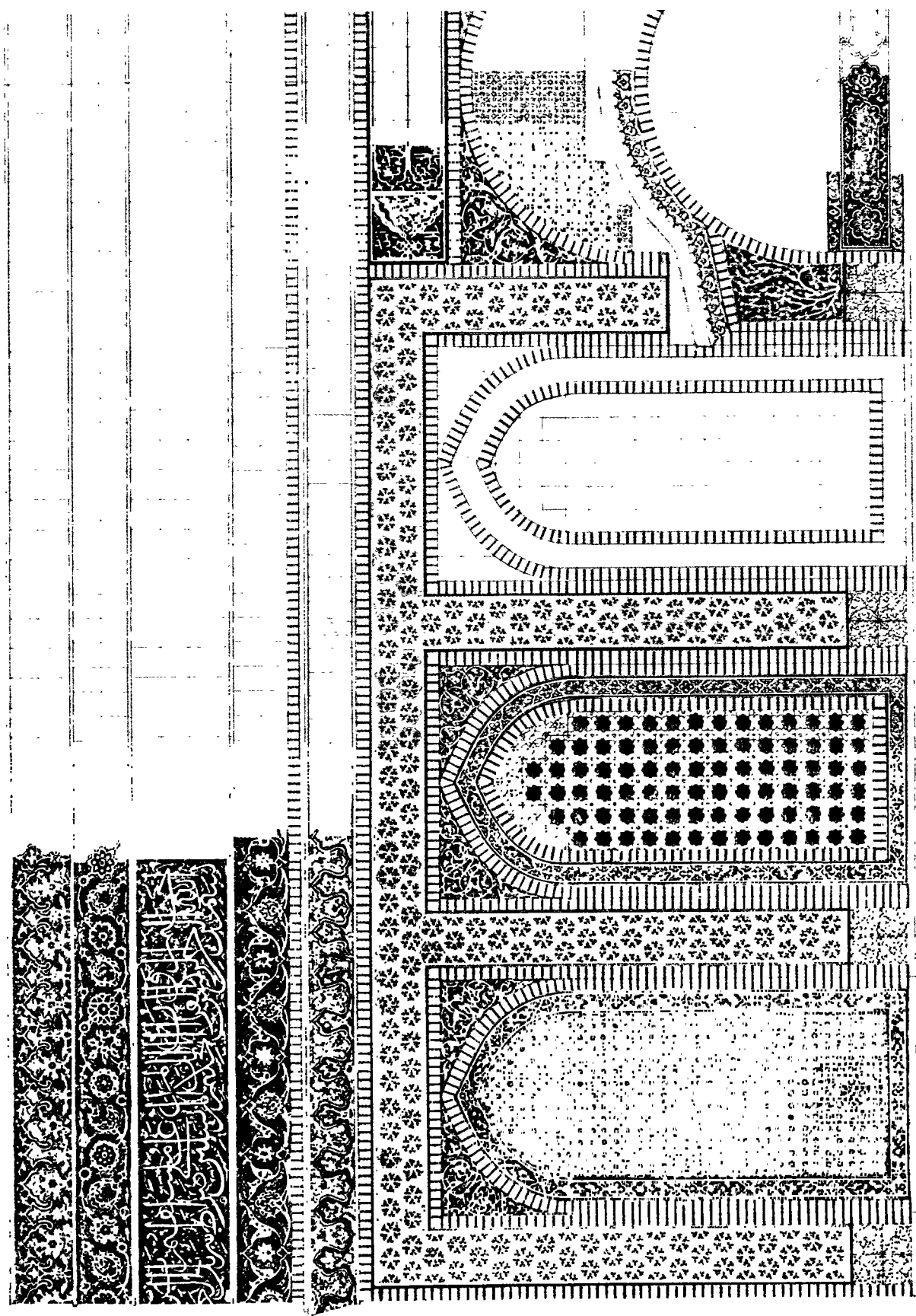


Fig. 42. Conjectural restoration

the architrave are filled with sixteenth-century tiles, as are the spandrels and the portico, the blind bay being filled with fifteenth-century tiles. This drawing is only intended to illustrate in broad lines some of the conclusions reached from the examination that has been made. It would not be hard to justify a more elaborate reconstruction. Inscribed panels might be placed in the architrave above the windows and also in the blind bay and instead of only turquoise-blue quoins to the windows enclosing pierced tiles of black on white, aubergine quoins might be used for some windows, as well as other varieties of pierced tiles (see Figs. 29 and 30).

§ 17. *Method by which the Tiles are fixed to the Wall*

The four sides of each tile are each provided with one or more holes about $\frac{1}{2}$ centimetre in diameter. The stone face of the wall is keyed with holes to receive a covering of from 8 to 10 centimetres thick and made of a mixture of plaster and marble dust. Bricks or slabs of this composition seem to have been made and baked, according to local tradition, in furnaces specially made for the purpose. Remains of these furnaces are still pointed out in the building known as the Najâra. In the slabs of this composition were bedded strips of copper forming, as it were, a series of pliable fingers able to grip the tiles by means of the holes already described. Plaster was used in setting the slabs to the wall and the tiles to the slabs. The glazed bricks forming the quoins are dowelled together by bronze or copper dowels and are laid on a bed of plaster. In work carried out in recent years cement mortar has been used, and in the early nineteenth-century repair a mortar composed of lime and cinders from the vegetable fuel used for heating baths was employed. This mortar is called Kosremil and is said to have hydraulic properties.

§ 18. *The Preservation of the Tile Decoration*

The present condition is to some extent shown by the illustrations. From these it is seen that large areas on the north-western faces of the drum and the octagon are entirely denuded of tiles. On the south-eastern side of the octagon one of the piers is without tiles and two others are more than half denuded. On the southern façade nearly half the cornice tiles have gone. On the north-western and northern façades a good deal of what remains is out of plumb and threatens to fall, and much of the work on the western and south-western sides is in an unsatisfactory state, due to two causes. The tiles and the enamelled bricks have been unskilfully set and many of the modern tiles which, on these faces, form the major part of the decoration, have already lost both glaze and colour and the rest threaten to reach the same condition within a few years. Many also of the fine sixteenth-century tiles are in a very bad state, due to causes already described. The glaze and colour of these tiles will soon disappear unless they are removed and placed under cover. They have served their time and are certainly unfit to remain exposed any longer. The same may be said of an appreciable number of tiles of later dates. There are also numbers of tiles, some of them very valuable, that, as already explained, have been used to fill gaps without reference either to their value or to the intention implied by their designs. They are lost by the manner of their actual setting. The condition of the outer surface of the building may then be summed up under four headings.

(a) Surfaces that are denuded of tiles.

(b) Surfaces that are covered by tiles in such a condition as to proclaim them unfit to remain on the walls of the building.

- (c) Surfaces covered with tiles set in a haphazard manner and without reference to any original intention.
- (d) Surfaces covered with tiles in good condition and needing only annual inspection to ensure their preservation.

The surfaces described under the first three heads comprise together a large proportion of the surfaces that are decorated, or intended to be decorated, with a covering of tiles.

But however unsatisfactory the present condition is, it is becoming rapidly still more unsatisfactory; and the time is not far distant, if, indeed, it has not already arrived, when it must be decided whether the method of tile decoration adopted more than four hundred years ago is to be maintained or not. It is not only a question of preserving the tiles that exist, it is also a question of preserving and continuing a system of decoration.

Tiles have decayed in the past and will decay in the future, some rapidly, some less so; some by natural causes, others by reason of neglect or lack of skill. In the past they have always been replaced in some form or other, and we see to-day the complex result of the efforts made to preserve the decoration by perhaps as many as fifteen generations of men. In the lives of these generations, as in those of their predecessors twelve hundred years ago, and in those of their successors to-day no less, the Dome of the Rock was, and is, an integral part, but certainly not primarily, as a work of art, but as a sacred place to be maintained as splendidly as circumstances may allow; to be changed if circumstances call for change and to perish if and when it should lose its meaning. There is some similarity between the situation to-day and the situation when the Osmanli Turks conquered Palestine. Then, as now, the outer decoration of the building had fallen, or

was rapidly falling, into decay. But to-day those responsible for the Dome of the Rock are in a more difficult position than were their forefathers four hundred years ago. The actual condition of the tile-covering may be nearly as bad as was that of the mosaics when the change took place; but then, though the art of mosaic may have been dead, yet they had an alternative in the already highly perfected art of tile-making. To-day there exists no adequate alternative and the art of tile-making is no longer what it was. The choice lies, then, between reviving the art of tile-making, till it can produce tiles equal, or reasonably near in quality, to those made in the sixteenth century; or witnessing a rapid deterioration in the building's appearance, a deterioration that will leave for future generations a building provided with a cement or plastered face, or the bare and much hacked about and shaken masonry of the original walling.

In these circumstances, it is hardly conceivable that every effort should not be made to revive the tile industry. In this matter an attempt has already been made, but not, it is true, in connexion with the needs of the Dome of the Rock. For it is not here alone that there is a demand for tiles. In Constantinople, in Brousa, at Medina, at Konia, and in many other places tiles are needed and have been in demand at least for the last fifteen years or more, not only for the repair of old buildings, but also for the decoration of new ones. So great has been, and is, the need that enterprise has been found to fulfil it. The initiative has come, as so often in such matters, from the Armenian people. In Kutahia, a town in Asia Minor, Armenians have, for many centuries, made glazed ware. The industry is traditionally supposed to date its establishment in Kutahia from the days of the Seljuk Sultans and to have been started by Armenians who had been emigrated from

Persia or from their own country where, from a remote period, they had been engaged upon such work. In the Armenian quarter of Kutahia are found, in almost all the houses, pieces of tile and remains of furnaces. Kutahia ware is well known and, for the finest specimens, very high prices are paid. The industry was still flourishing up to the beginning of the eighteenth century, but towards the end of the nineteenth century only rough glazed ware for peasants' use was made. In the beginning of the present century tiles for covering the tops of tables were also made and in 1902 efforts were directed towards further development. In 1904 the Governor's offices in Kutahia were decorated with tiles and in the following year the Post Office at Constantinople was similarly decorated. Subsequently tiles were made for the repair of the Yéchil Djamé and Yéchil Turbé at Brousa, for the Muradiya Turbé also at Brousa, for the Mevlavi Hané at Konia, for the Haram al Sherîf at Medina and for the Mosque of Sultan Selîm at Adrianople. These works were all carried out under the direction of the Wakfs Administration at Constantinople. It is claimed by no one that the tiles are equal to those of the fifteenth and sixteenth centuries. To attain that standard will need time; but the time could be shortened by the help of modern methods of research. Even without that help, considerable advance was being made when war broke out. What the effect of the war has been is not yet known, but there is reason to believe that many, if not all, Armenians will desire to leave any territory that remains under Ottoman rule. An Armenian tile-maker from Kutahia is now in Jerusalem. He intends to attempt the establishment of the industry in that city. Certain small experiments that have been made recently, as well as the knowledge that, in the past, tiles have been made in Jerusalem,

encourage a belief that the necessary materials exist; and, with European assistance some confidence may be felt that, within a reasonable period, tiles of the required quality could be produced. As a first step it is necessary to import a few Armenian workers from Kutahia. An effort is now being made to do this.¹ Before the war, and in spite of all the disadvantages of Ottoman rule, the industry was, as has been shown, making progress and the demand for tiles in the Near East was already considerable. An increase in the prosperity of all Near Eastern countries may be expected as one of the results of the war. This increase will, no doubt, affect all industries and all activities. Buildings now falling to ruin may be preserved. In Mesopotamia and in Persia are many buildings decorated with tiles. If a school of workers could be established in Jerusalem it might not only prove of advantage to the Dome of the Rock, but also form a centre for the revival of activity in many other parts of the Near and Middle East.

Pending the production of suitable tiles it is necessary that everything possible should be done to preserve those that still exist. Their preservation can be effected in two ways. Firstly by ensuring the setting of those that are sound and in good condition, secondly by removing to the Museum any in a condition that will lead to their complete destruction if left longer exposed to the weather.

Assuming that success is attained in the manufacture of new tiles it will be necessary to determine in what manner they are to be used. The obvious course is to follow the architects who carried out the great repair in the sixteenth century. Their work has already been discussed and described and their intentions and principles

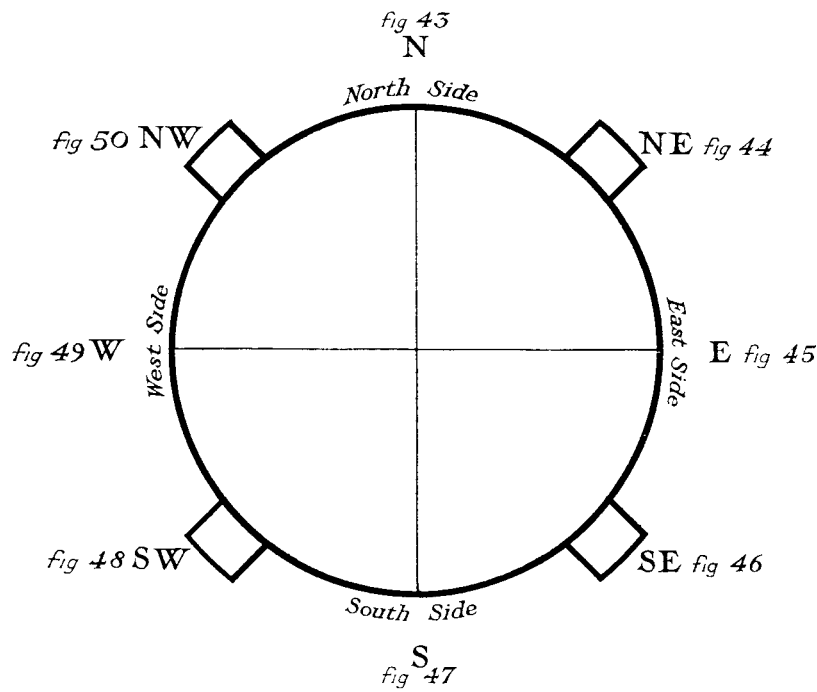
¹ This was written in June 1919. Since then Armenian workers have been imported and have worked with promising results.

of design have to some extent been disentangled from the present confusion. In spite of that confusion it is not suggested that, where the work is in good condition, it should be touched. For instance, the work below the cornice on the north-eastern, eastern, south-eastern, and southern façades is in comparatively good condition. It needs little more than small repairs consisting in the replacement by new tiles of those no longer able to resist the weather. On the four other façades the tiles date mostly from 1874. Many have already lost both their glaze and their colour; most of them have been re-set on more than one occasion since that date and their actual setting is not of a kind to promise a long life. Briefly the position is that on these four façades practically all the tiles need re-setting and very few of them are of a quality to justify their being re-set. The same may be said of the tiles covering the parapet wall. It is therefore desirable to renew the tile decoration of these four façades and of the parapet wall. On the drum the mosaic inscription needs repair where it has fallen or where it has been repaired with inferior tiles. The panels between the windows need completion with facsimiles of the old designs. The windows also need a good deal of repair and the band below them needs practically complete renewal. About twenty-six thousand new tiles are needed. The cost of the work described would be about £E.8,000.

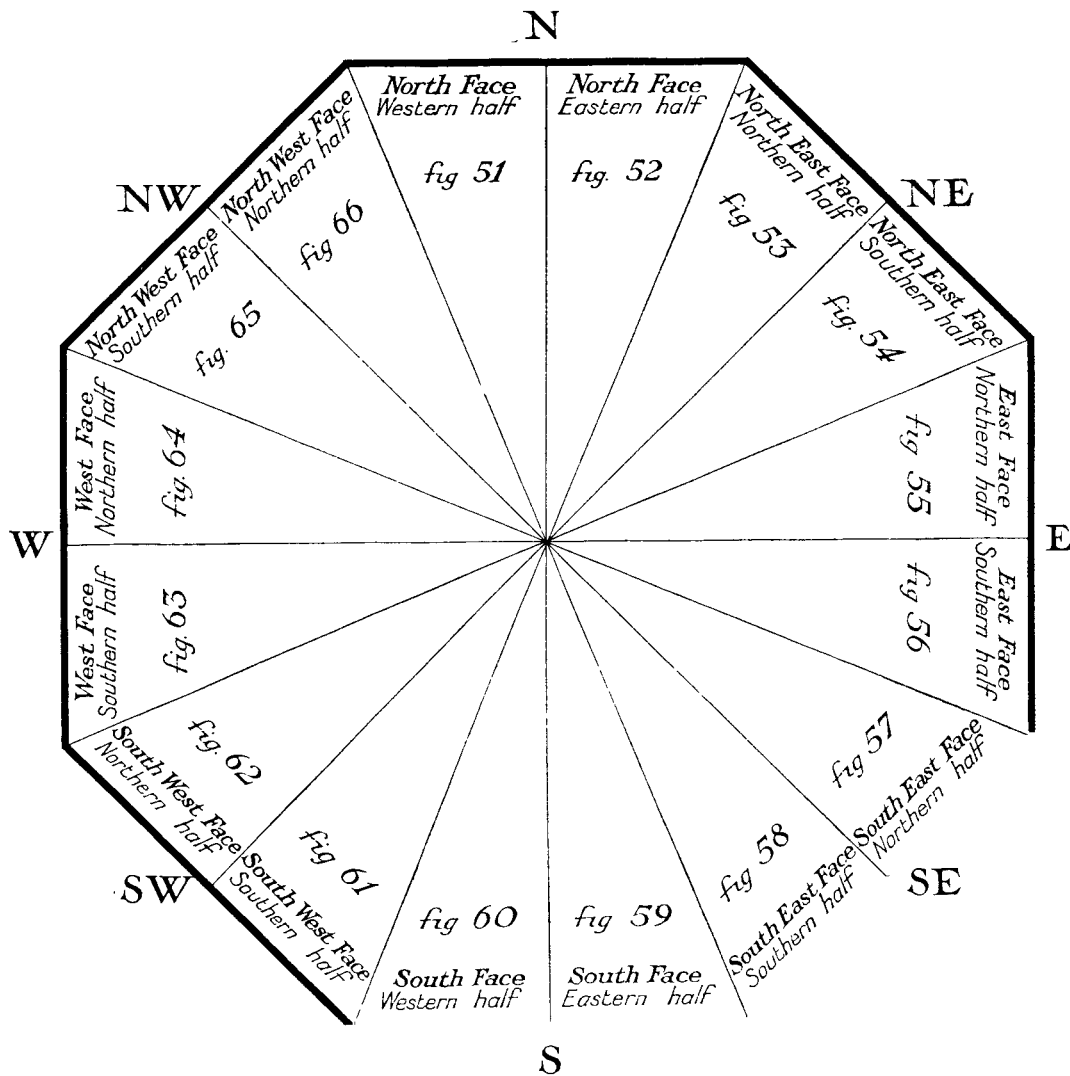
§ 19. *The Marble Covering Below the Tiles*

Just as the tile-covering has often been repaired, so has the marble that covers the lower part of the octagon. The actual plinth dates from 1874. At the same time many new slabs were provided for the piers and the panels between the piers. The newer marble is bluish in colour and the older a warm yellow. How far the repairs have altered

the original design cannot be said ; but certain points are worth noting. There is a noticeable difference between the marble decoration of the north-west, west, and south-west façades (those that are most exposed to the weather) and the marble decoration of the other façades. On the exposed façades the panels are smaller and are combined with pieces of local red stone forming bands round the marble slabs and disposed in various geometrical forms. On the other façades the treatment is simpler and the slabs larger. They are arranged in rectangles, sometimes in hexagons and circles bordered by fillets and without any admixture of red stone, except in one panel on the south façade which dates, if the inscription above it can be relied upon, from the early nineteenth century. The use of red stone seems then to have been recent and the result of a lack of marble at the time when the repairs were undertaken. To the same cause may be attributed the reduction in the size of the marble slabs on the exposed façades, it being necessary, in order to fill the spaces, to use any small slabs over from former works and to combine them with slabs that still existed on the wall, by cutting these down and arranging them with the newly set slabs in such a way as to fill the vacant spaces symmetrically. Compared to the tile-decoration the denuded areas in the marble covering are of small extent ; but, as the illustrations show, there are several gaps to be made good and a proportion of the marble still in places needs re-setting owing to being loose or out of plumb.



Key to photographs of the Drum, figs. 43-50



Key to photographs of the Octagon, figs. 51-66

For chronological keys to the tiles in each photograph see figs. 43 bis to 66 bis at the end of the volume

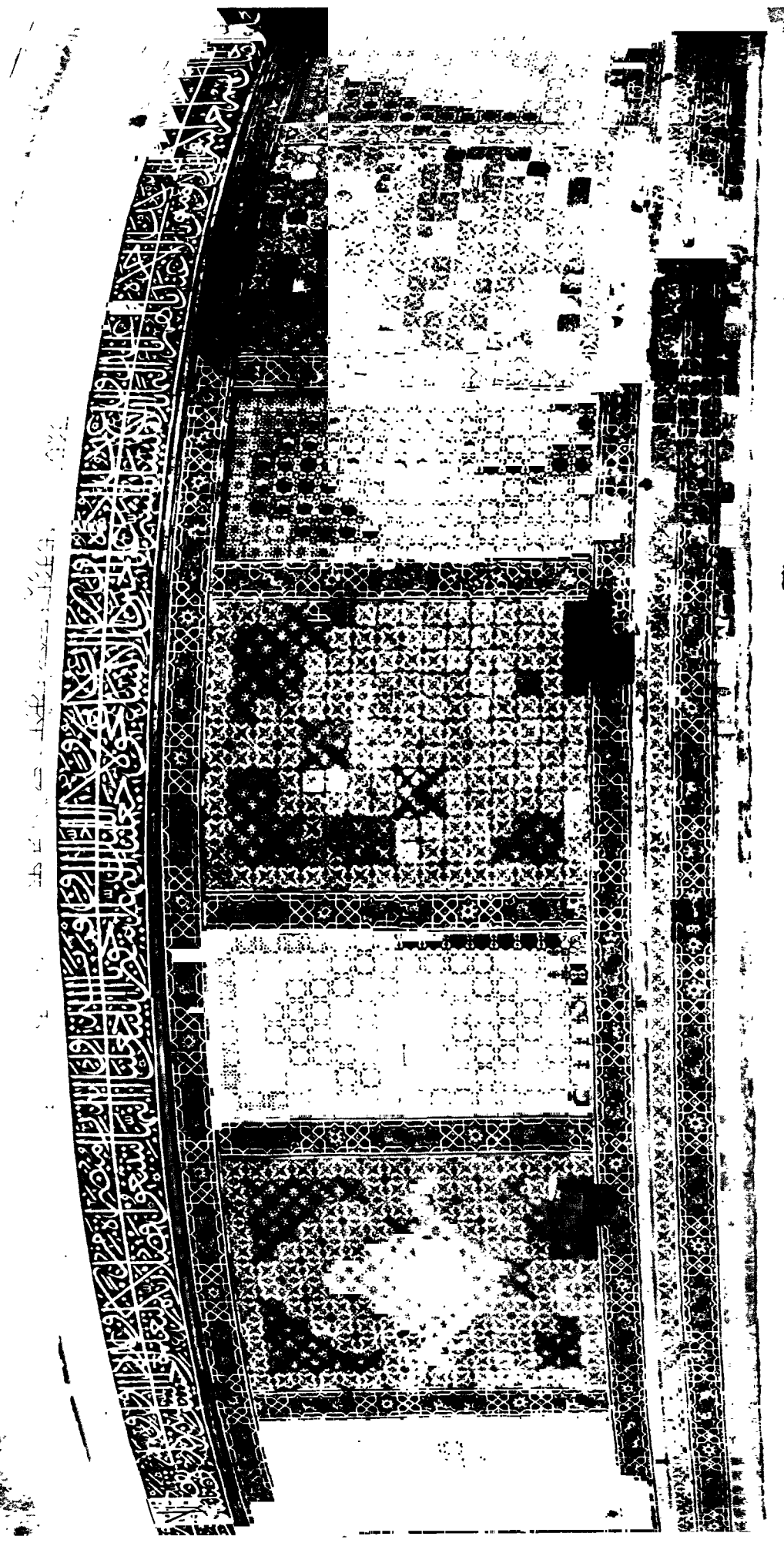


Fig. 43. North face of Drum

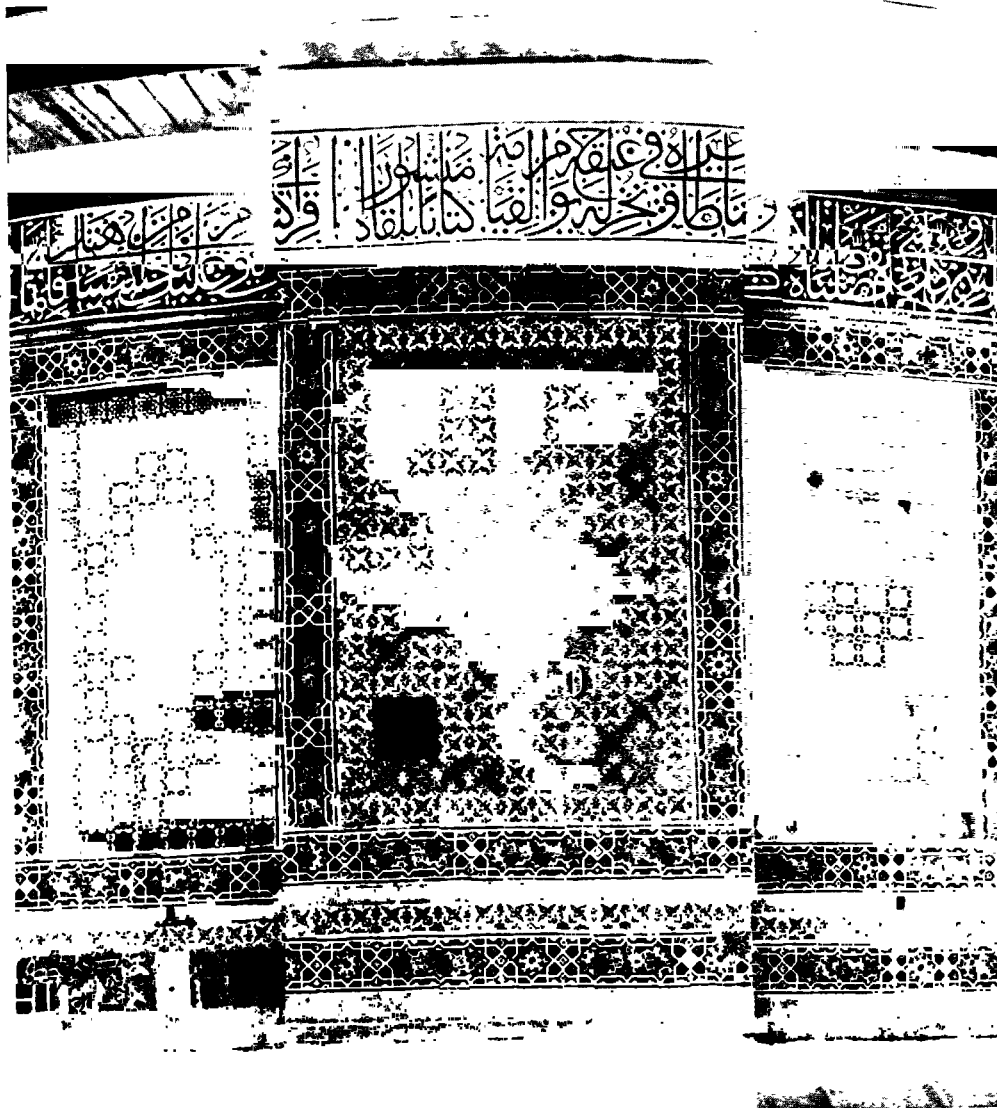


Fig. 44. North-East buttress of Drum

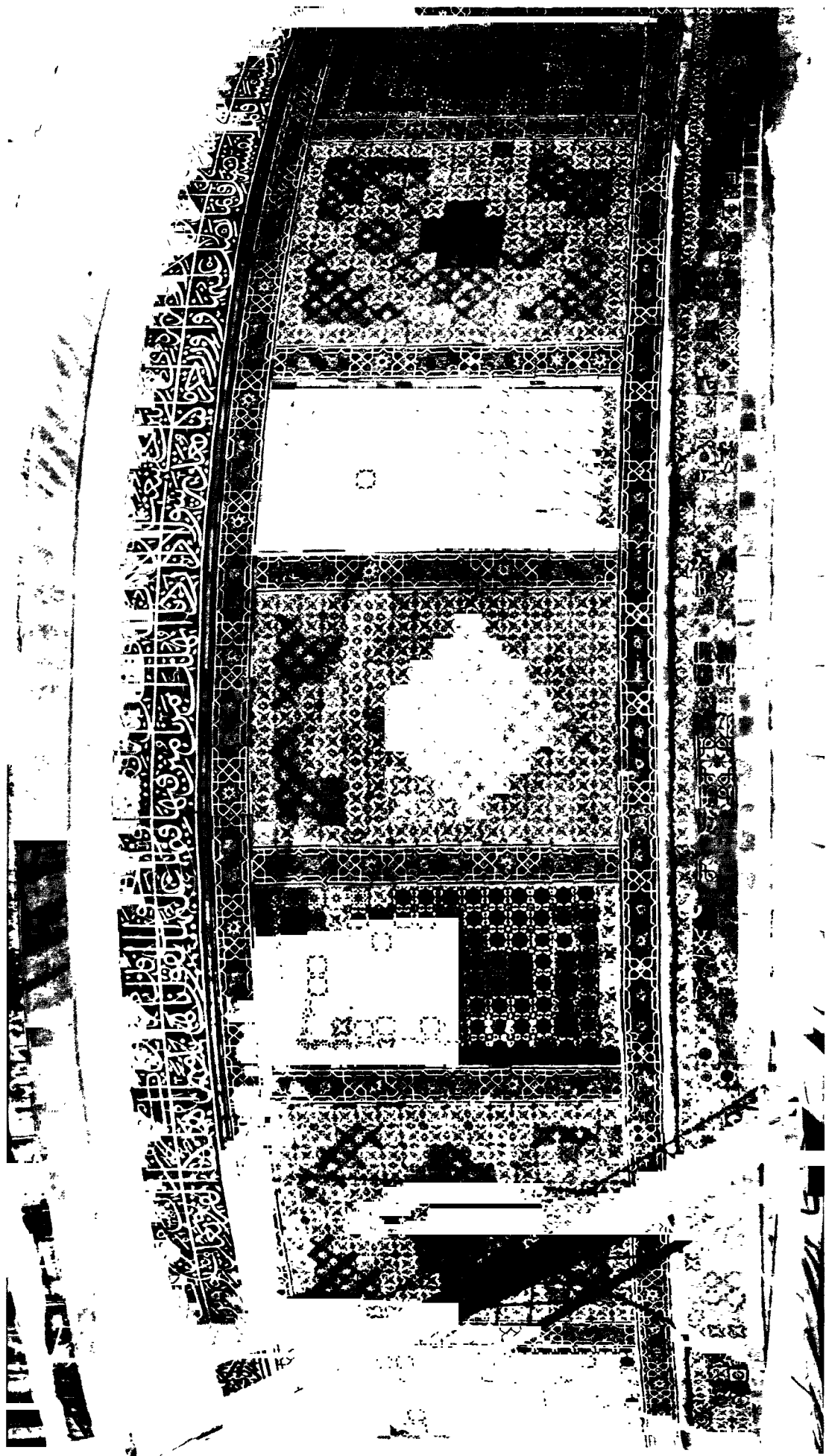


Fig. 45. East face of Drum

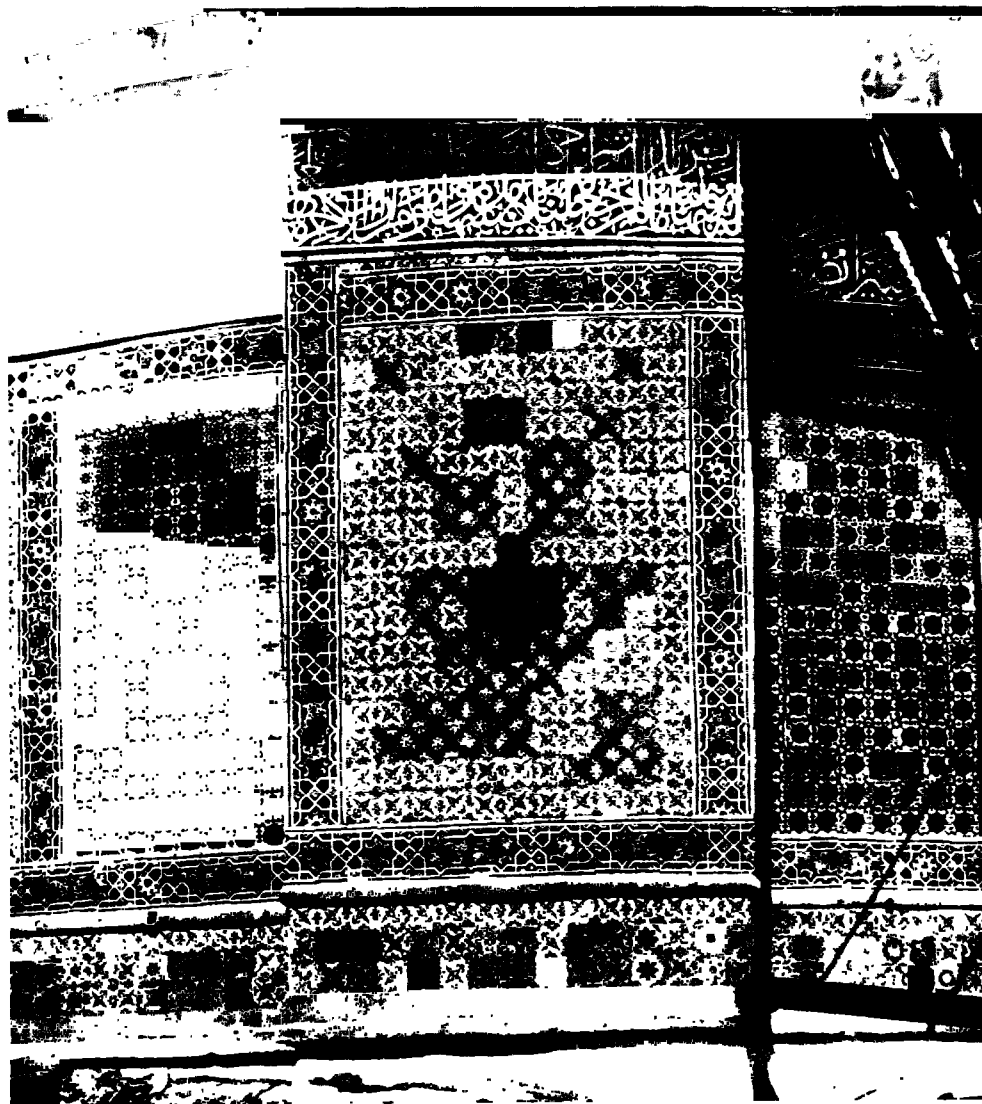


Fig. 46. South-East buttress of Drum

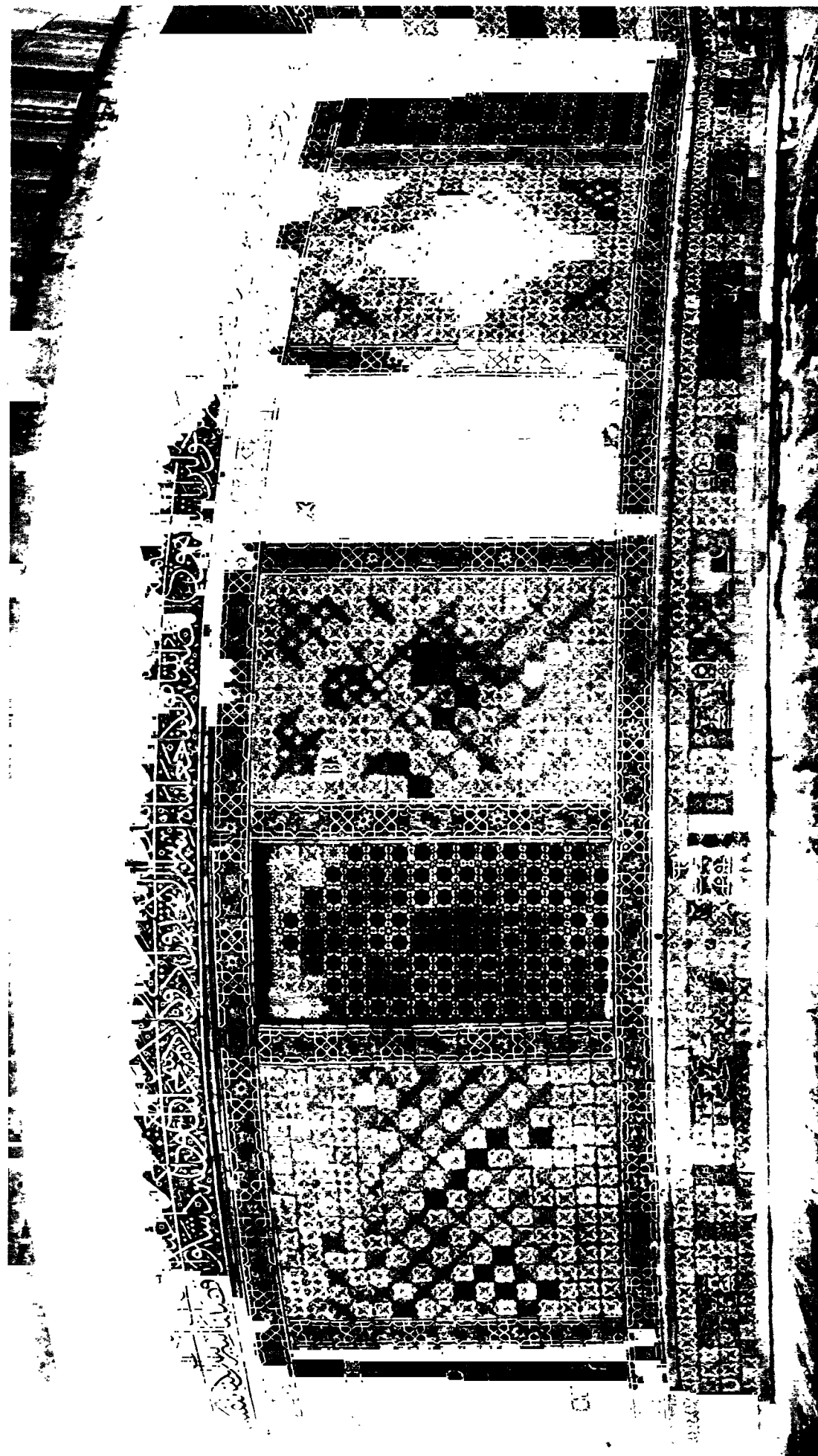


Fig. 47. South face of Drum



Fig. 48. South-West buttress of Drum

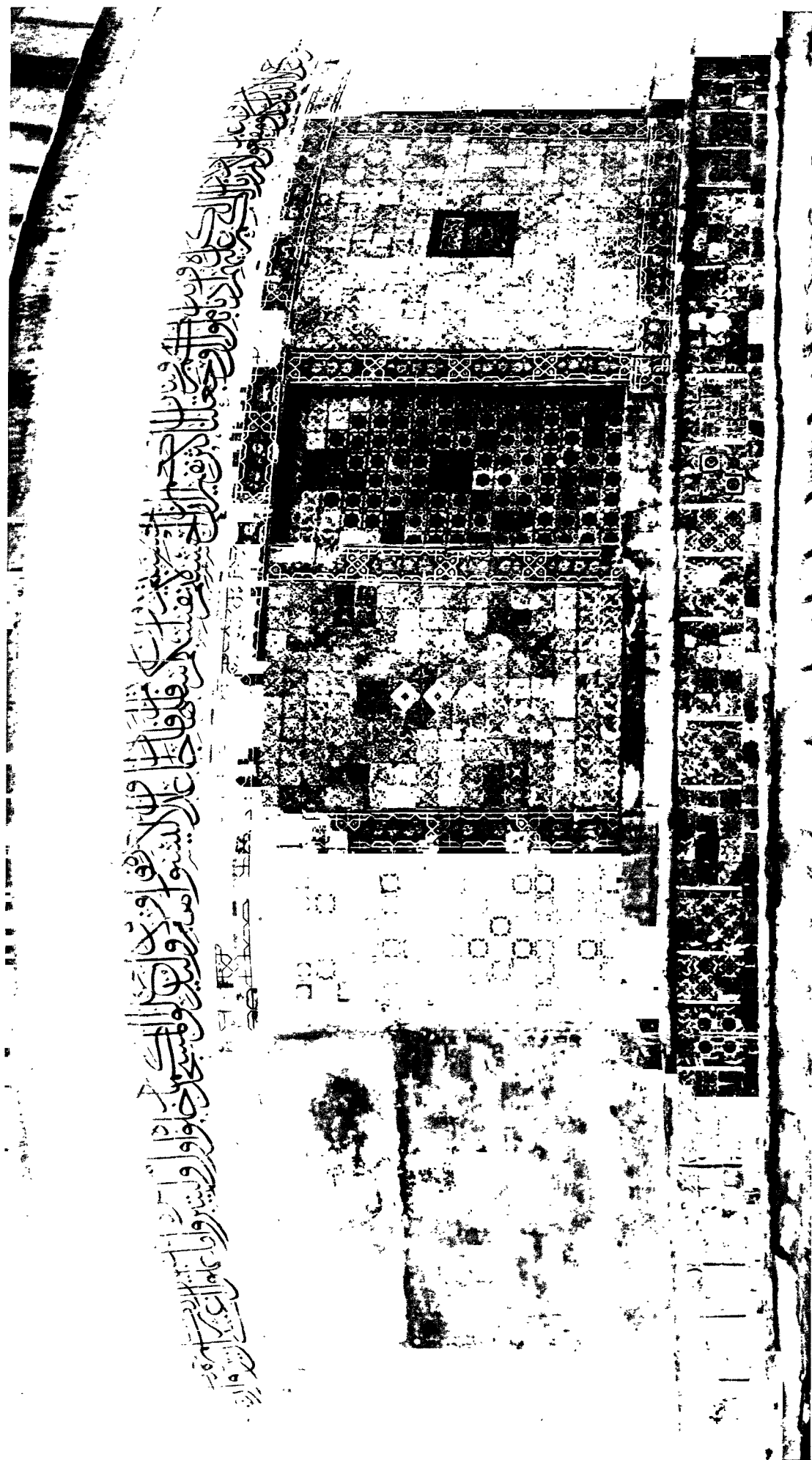


Fig. 49. West face of Drum



Fig. 50. North-West buttress of Drum

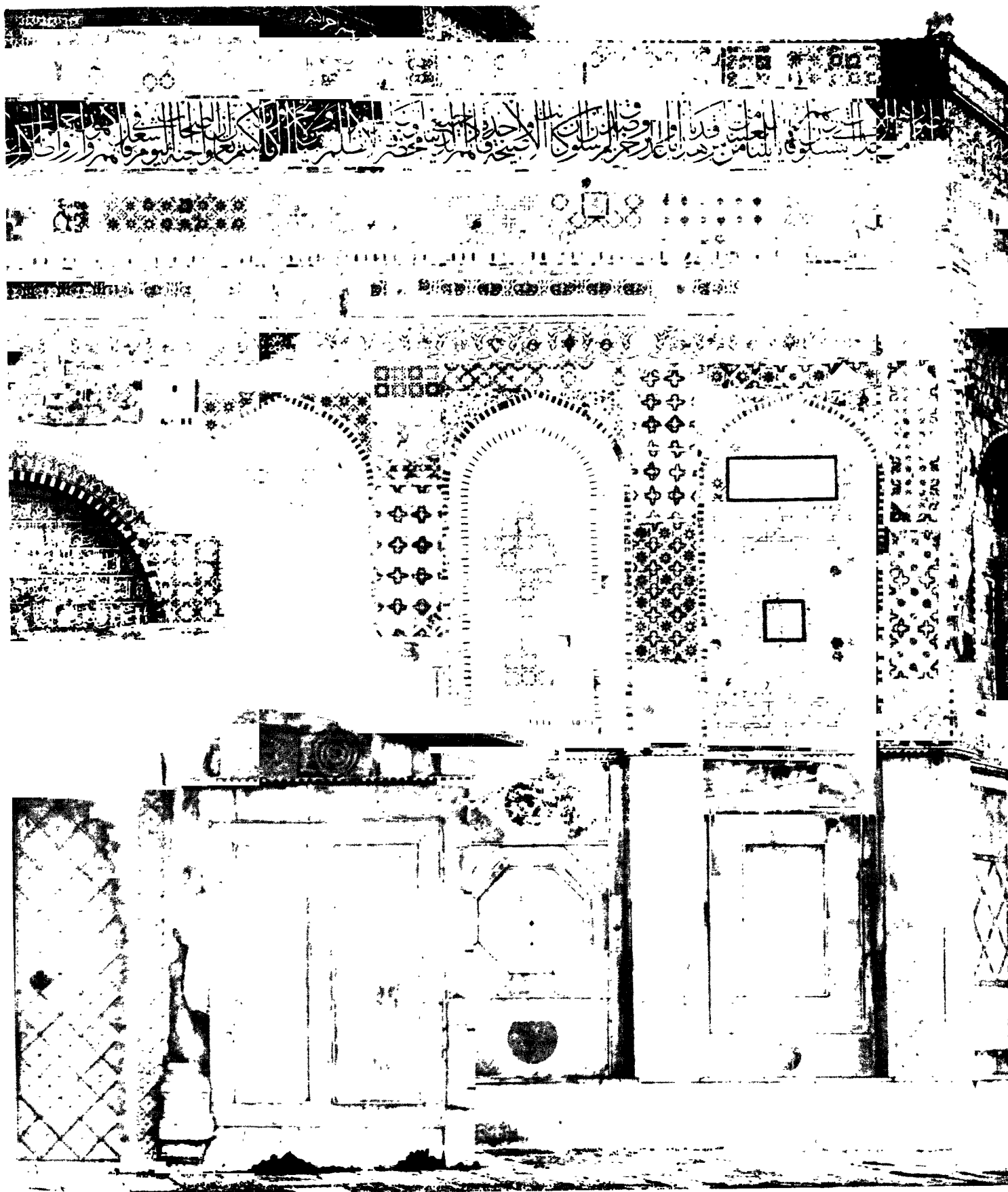


Fig. 51. North face of Octagon. Western half

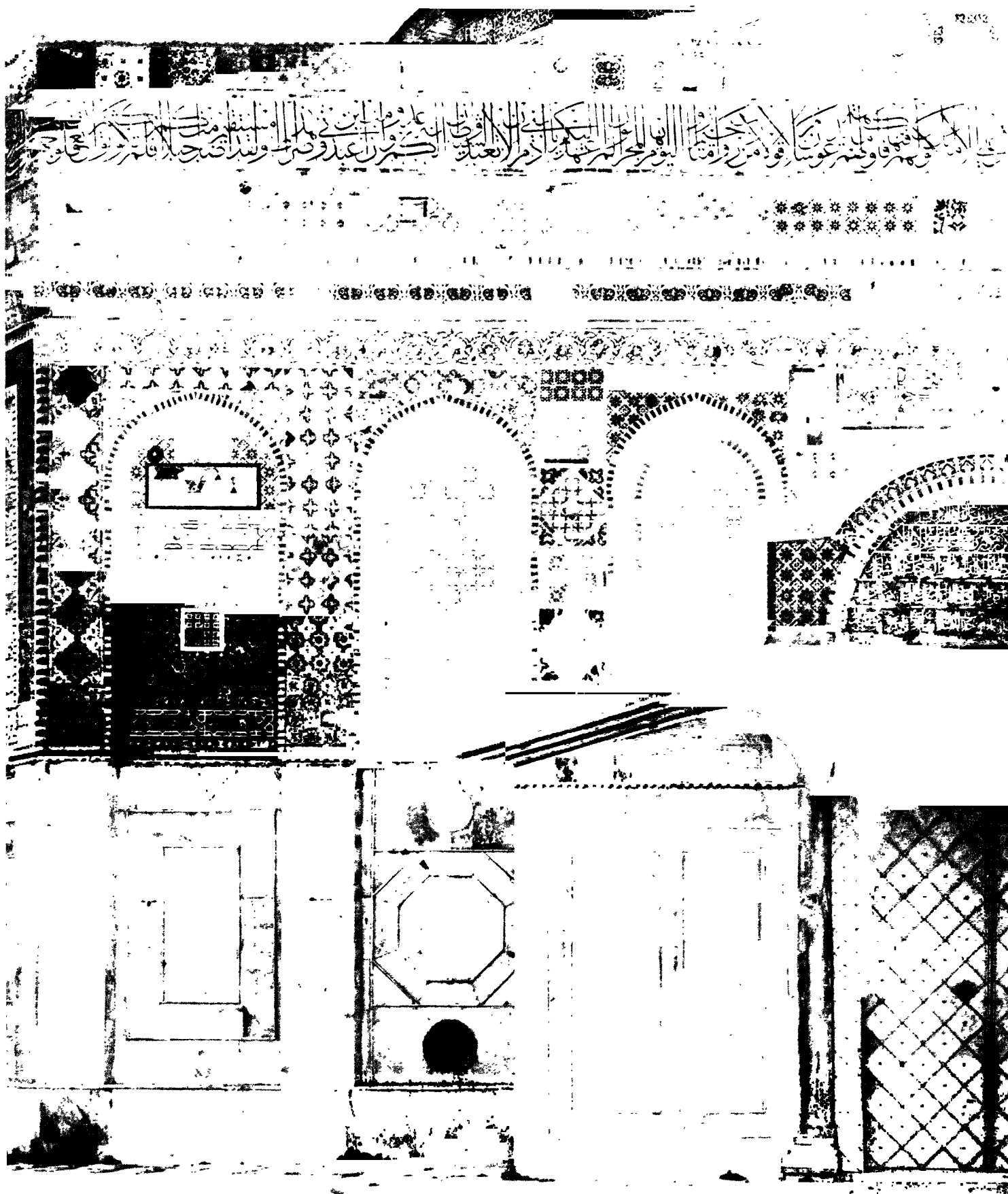


Fig. 52. North face of Octagon. Eastern half

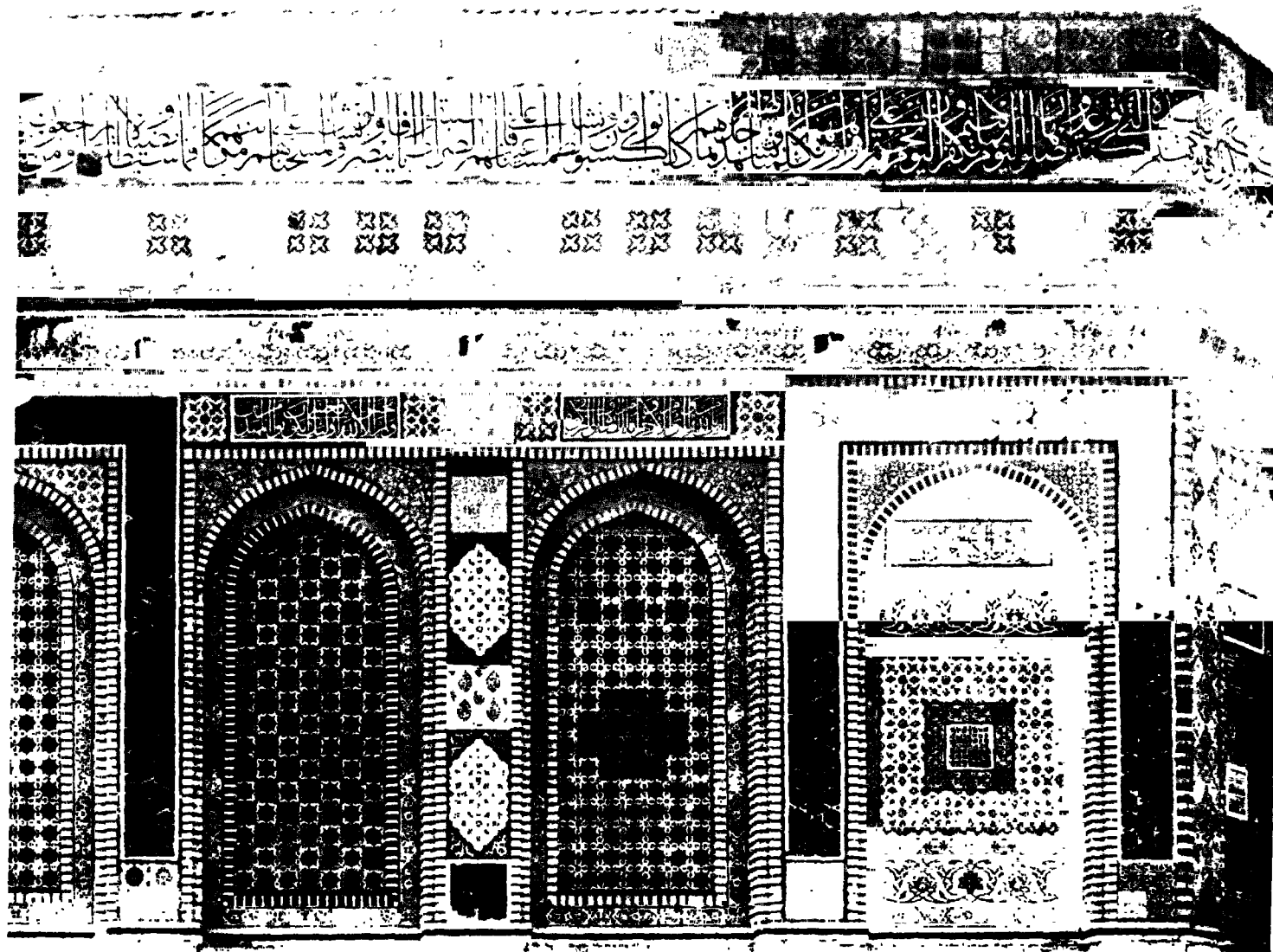


Fig. 53. North-East face of Octagon. Northern half



Fig. 54. North-East face of Octagon. Southern half



Fig. 55. East face of Octagon. Northern half

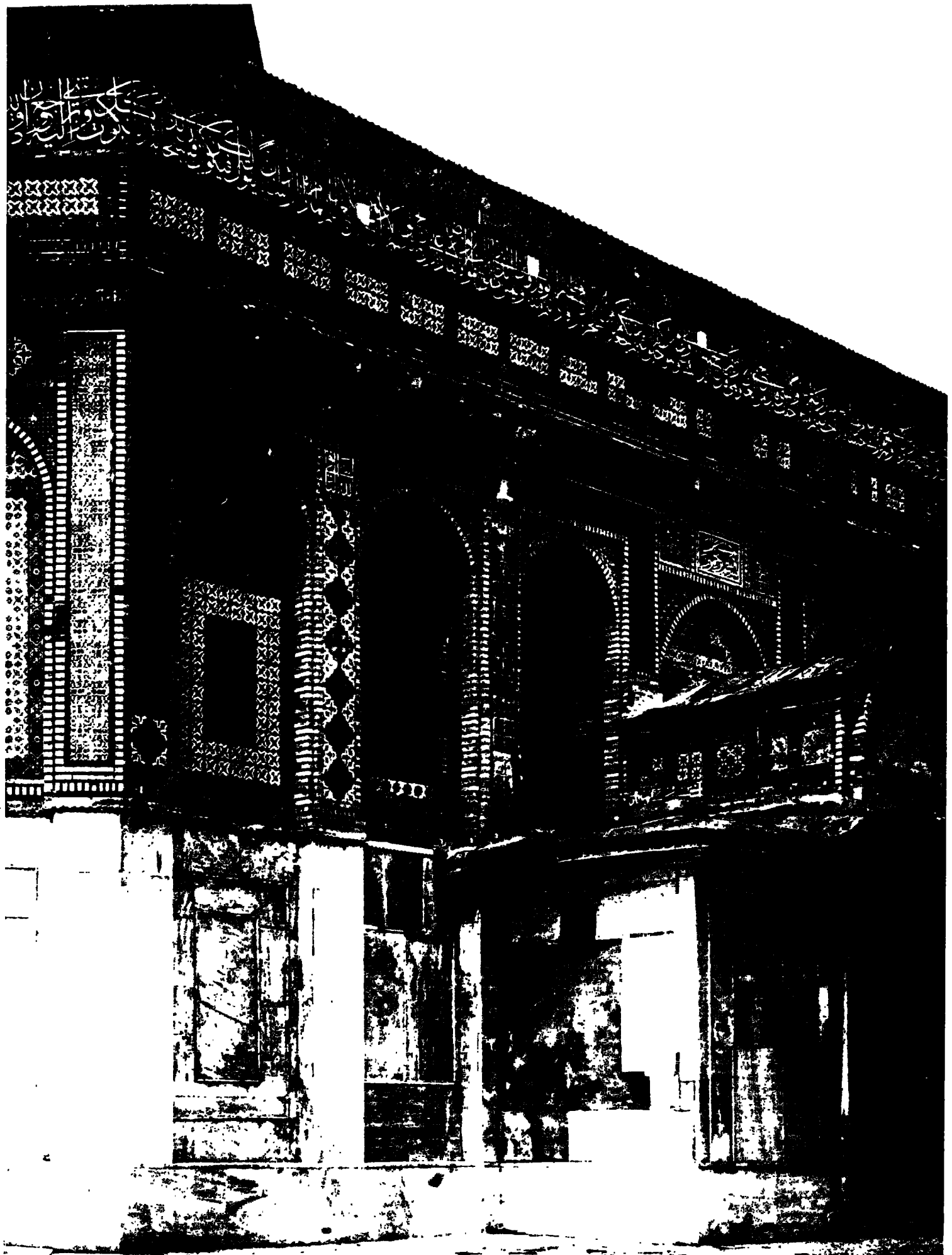


Fig. 56. East face of Octagon. Southern half



Fig. 57. South-East face of Octagon. Northern half

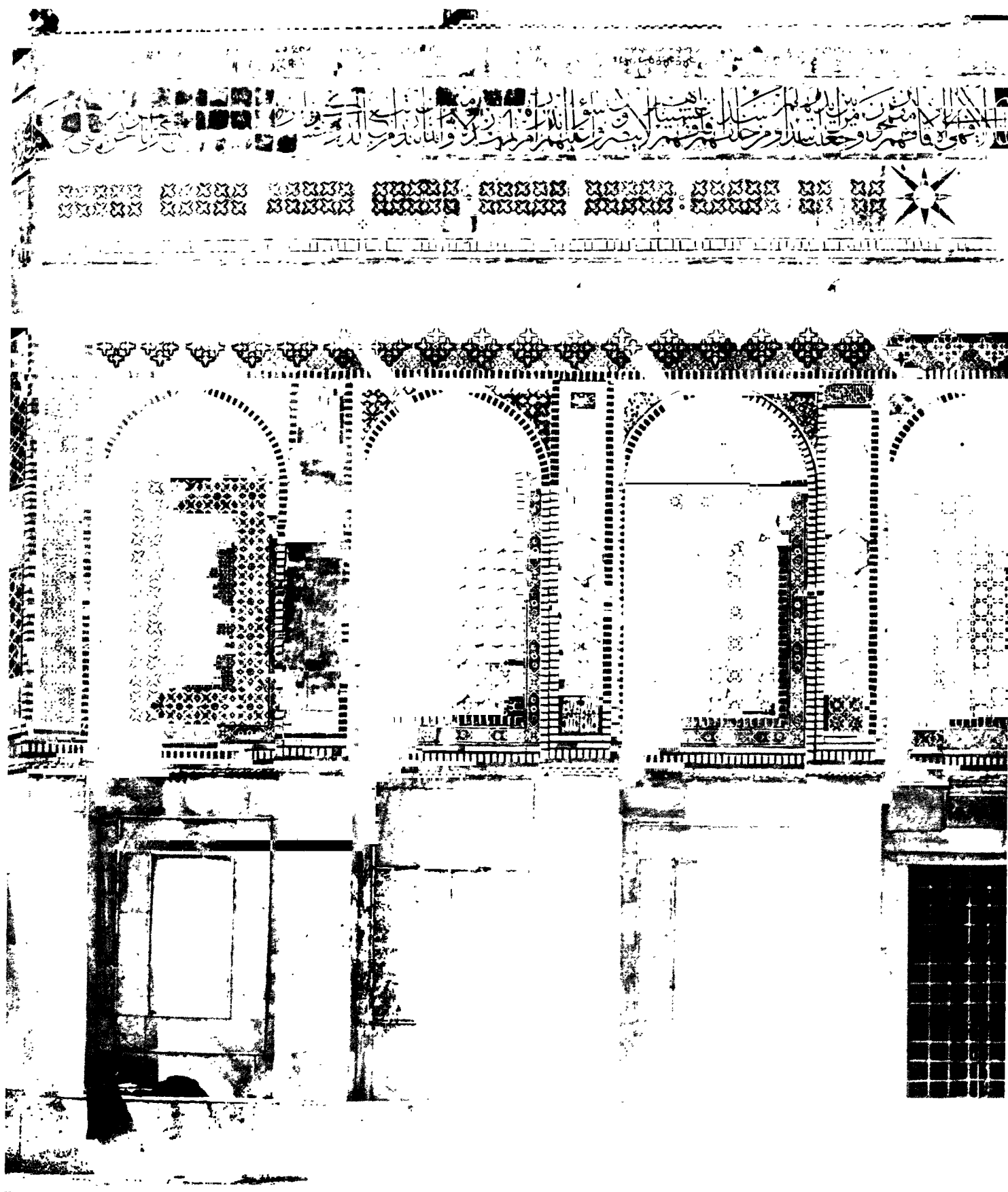


Fig. 58. South-East face of Octagon. Southern half

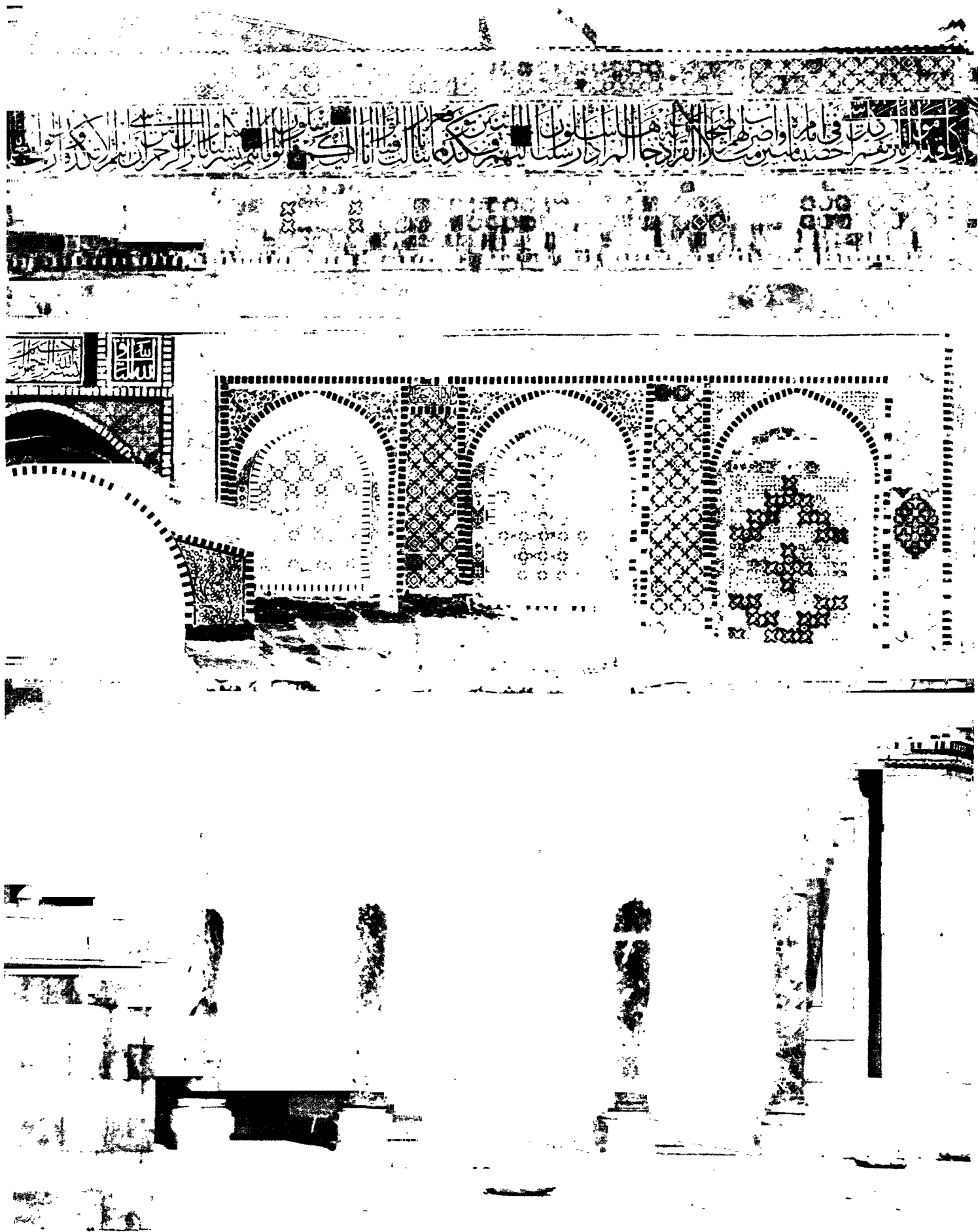


Fig. 59. South face of Octagon. Eastern half

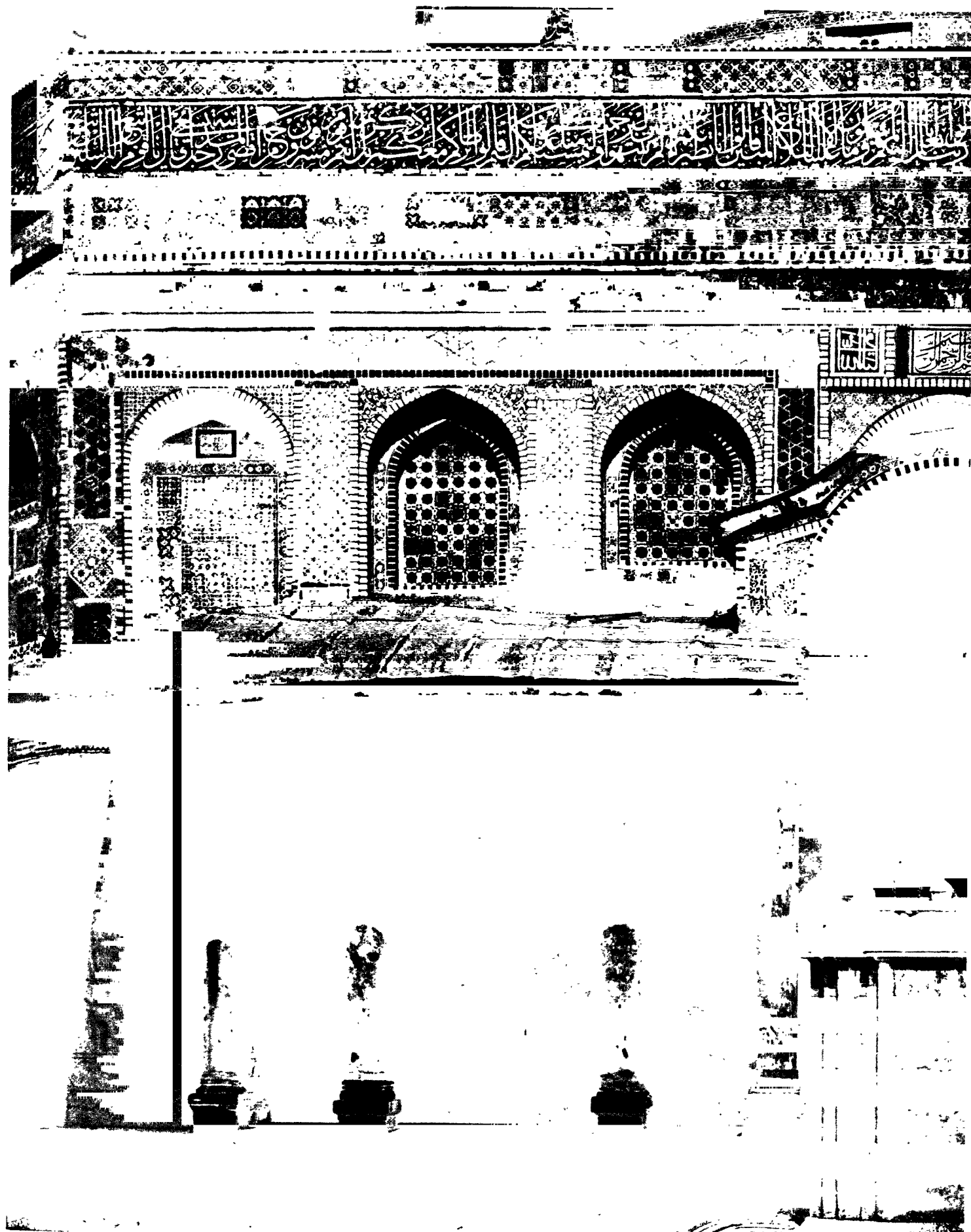


Fig. 60. South face of Octagon. Western half

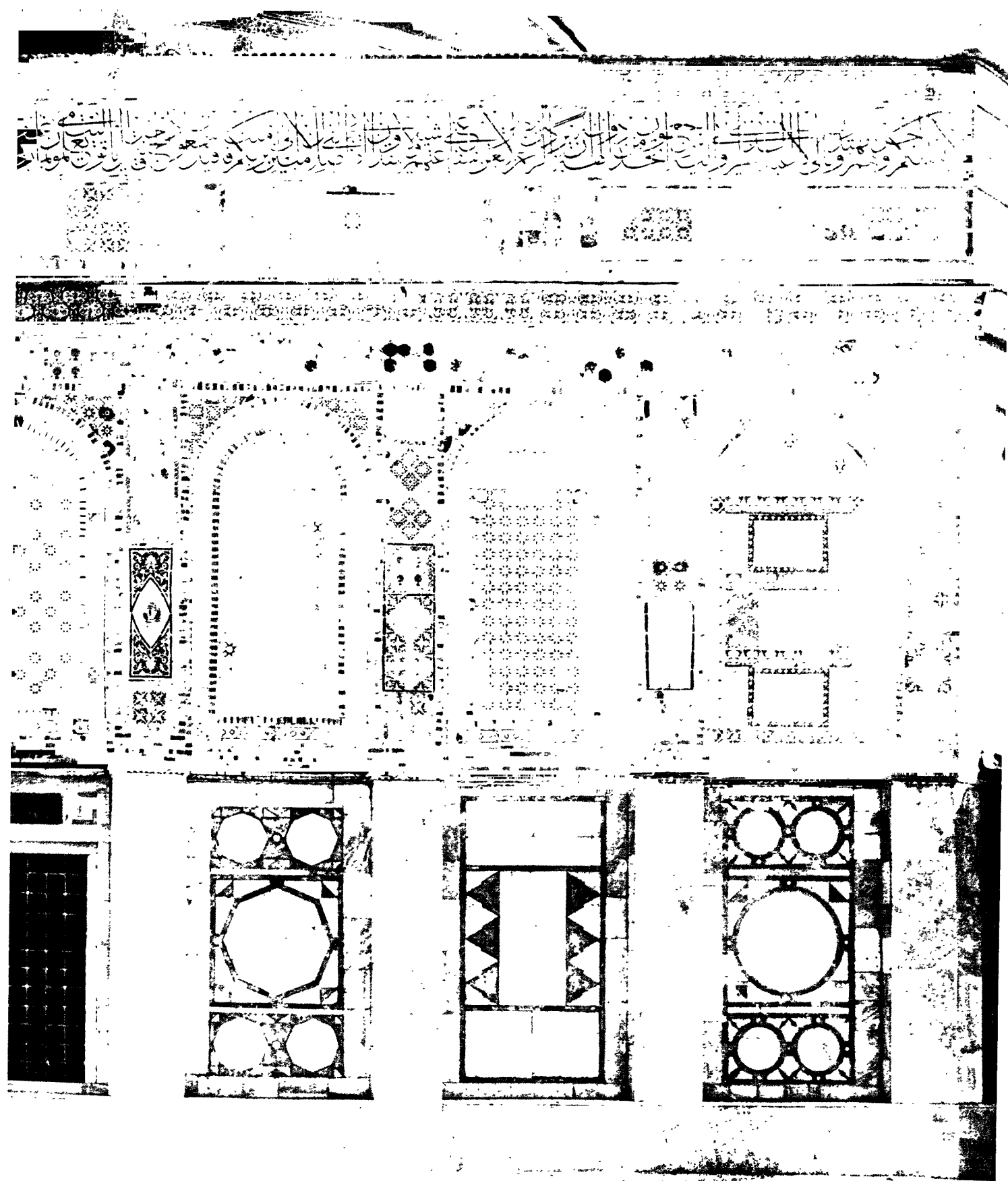


Fig. 61. South-West face of Octagon. Southern half

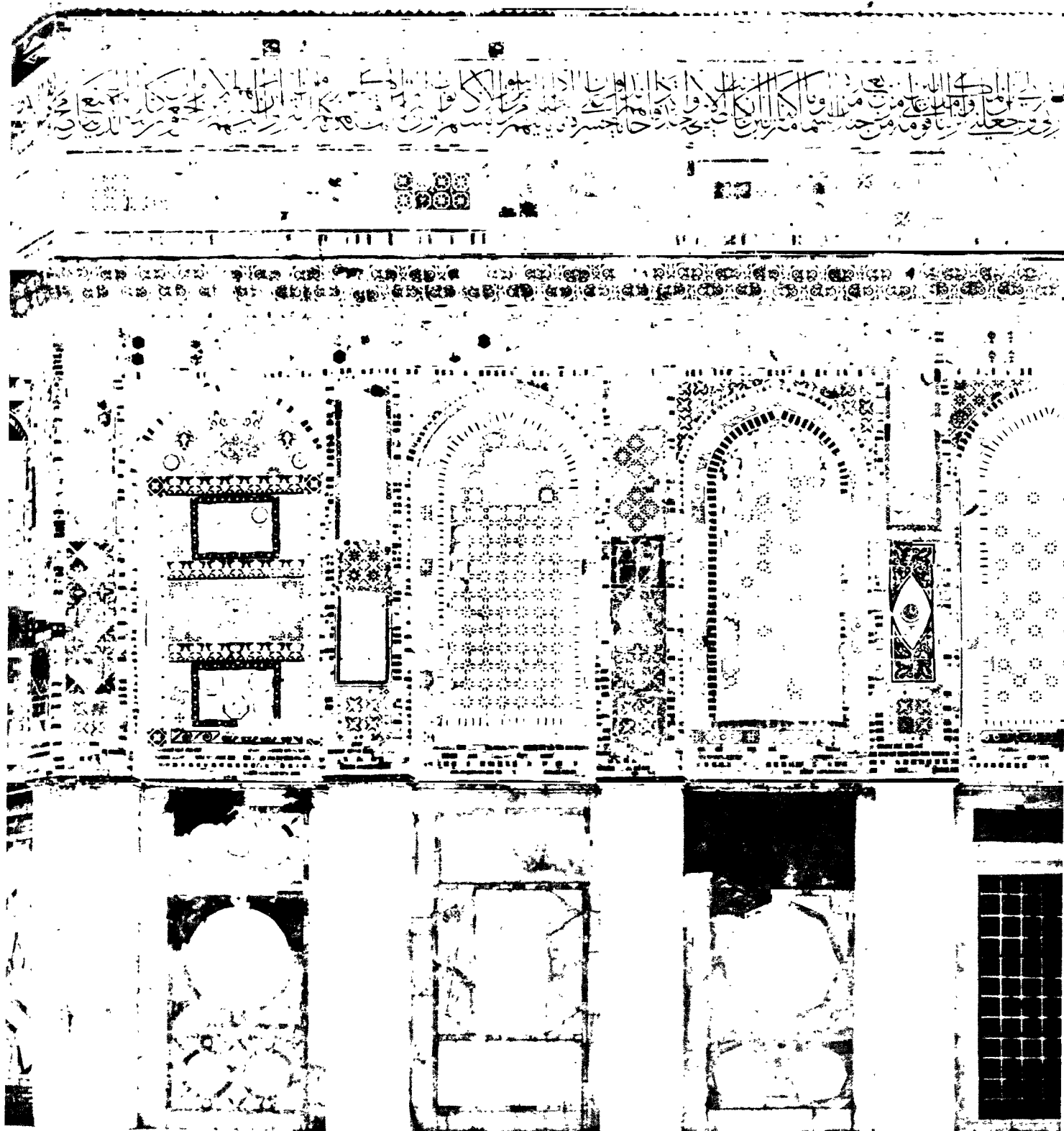


Fig. 62. South-West face of Octagon. Northern half



Fig. 63. West face of Octagon. Southern half



Fig. 64. West face of Octagon. Northern half

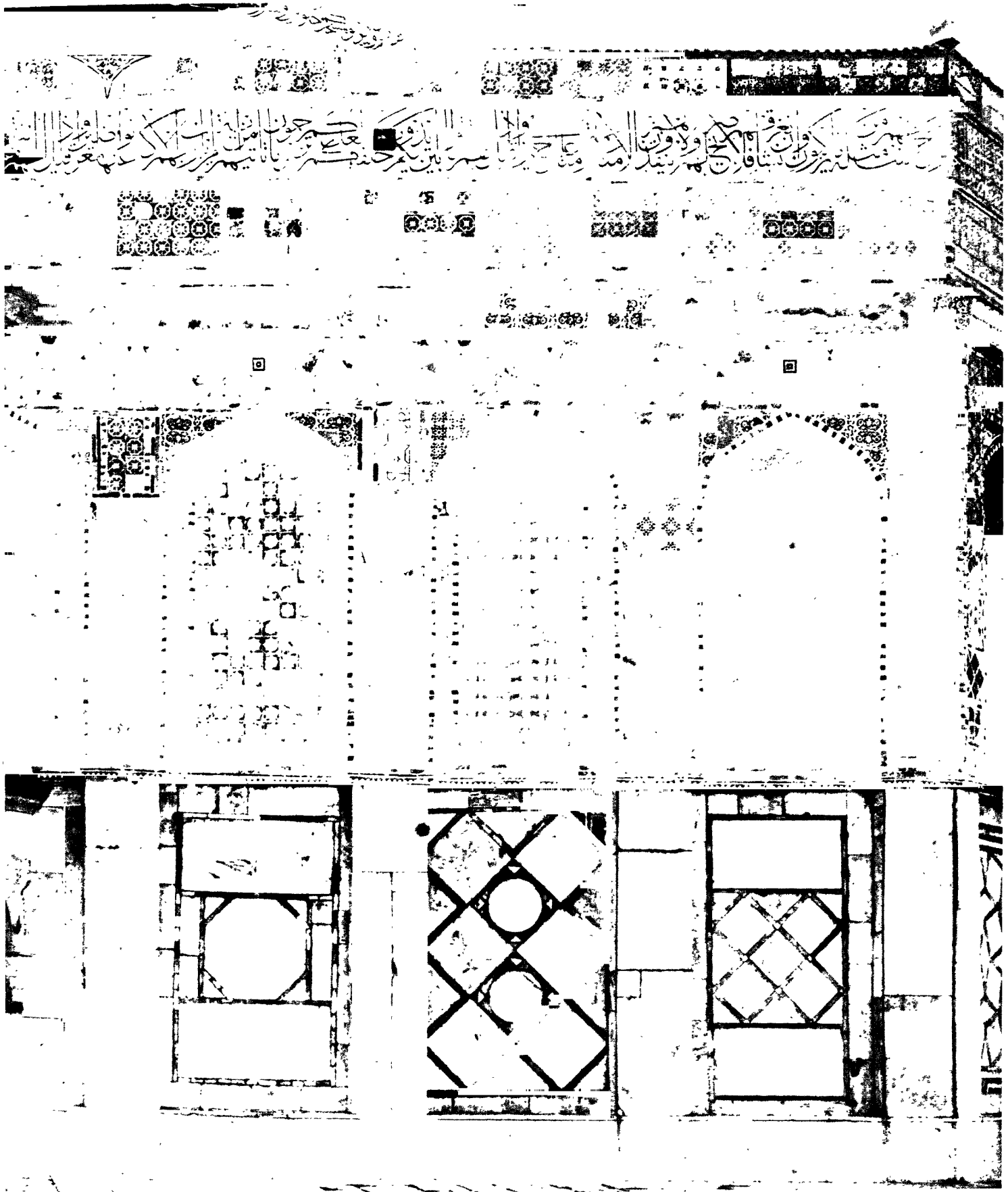


Fig. 65. North-West face of Octagon. Southern half



Fig. 66. North-West face of Octagon. Northern half

III

THE LEAD COVERING OF THE DOME AND OF THE ROOF BETWEEN THE DRUM AND THE OCTAGON WALL

THE lead covering the dome is in fairly good condition, but there are leaks in at least three places and it will be well to put up such scaffolding as is needed to make a detailed examination of the whole surface. The first leak is on a level with the first horizontal plate above the wall-plate and at the intersection of the line of this plate with a line drawn from the crescent finial to the cornice and joining the cornice at a point about four metres westward of the south-western window of the dome. The second leak is above this window at a point between it and the first horizontal plate. The third leak is on the same level as the second and on a line drawn from the crescent finial to a point on the cornice seven metres southwards of the same window. The lead covering the octagon also needs complete overhauling; a good deal of it needs complete relaying with properly formed rolls between the sheets and adequate guttering to collect and discharge the water at the gargoyles. The present system which relies upon cement flashing to keep out the water at the lines of junction between the walling and the lead should be changed, because the cement cracks under the summer sun and becomes detached from the wall. Instead the lead should be carried

up the wall for a short distance and tucked into the masonry.

For the repair of the lead roofing it will be necessary, as soon as communications are open, to get lead-workers from abroad. It is probable that Constantinople is the nearest place from which they can be obtained.

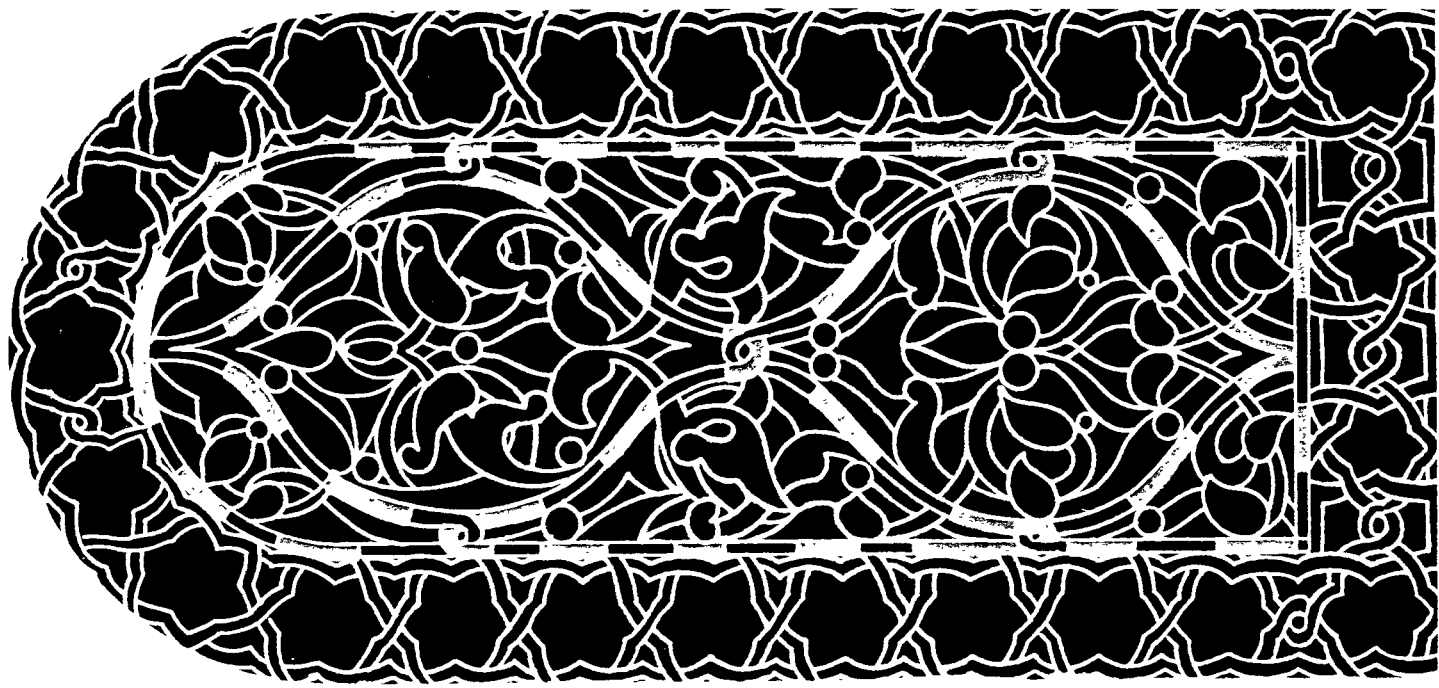
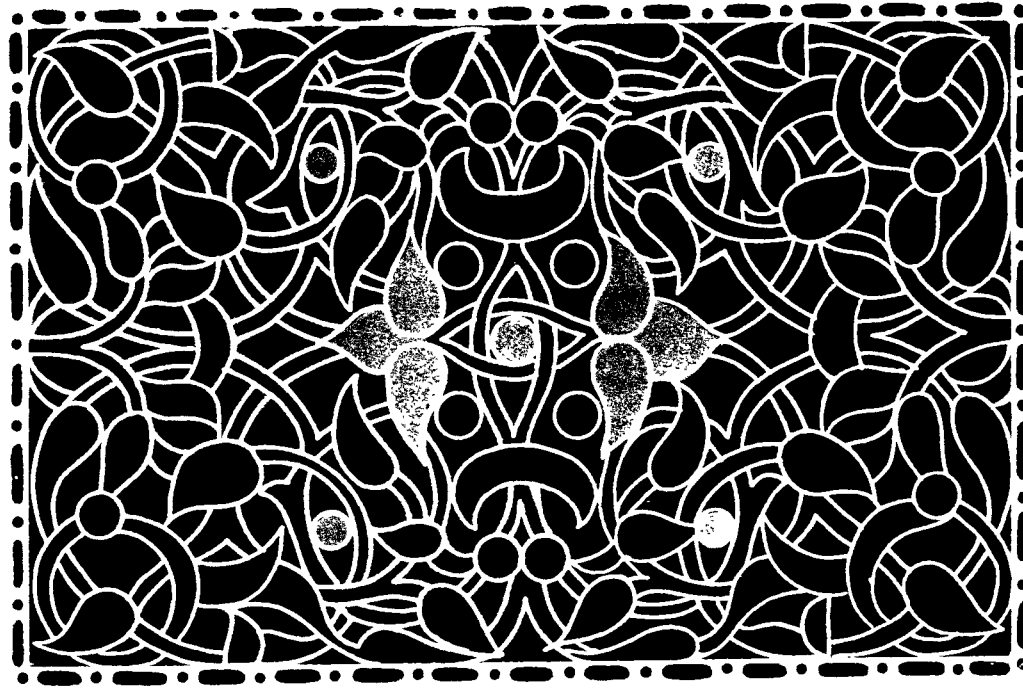
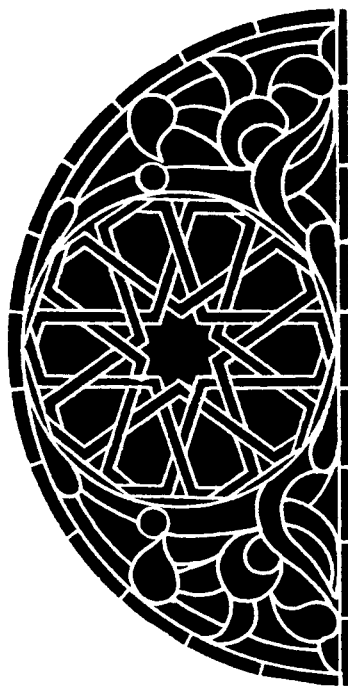
IV

THE INTERNAL DECORATION

§ I. *The Coloured Windows*

EACH of the window-openings in the drum and in the octagon is filled with a window made of plaster and coloured glass. Outside this window is a second window also made of plaster pierced with large circular holes about 20 centimetres in diameter and filled with plain greenish or colourless glass. Outside these windows are grills of pierced glazed tiles.

The oldest work is found in the drum. Of the sixteen windows in the drum six appear to date from at least as early as the fifteenth century, possibly the fourteenth. The others are of various dates and several are as recent as the end of the nineteenth century, when they were made just before the German Emperor's visit. In the octagon none of the windows are earlier than the sixteenth century. Some are quite modern, others date from 1874, and others again from the eighteenth and early nineteenth centuries. The plaster is set in wooden frames about eight centimetres



Figs. 67-8. Two of the windows in the drum
Scale 1:15.23

square in section. The designs of the oldest windows in the drum consist either of geometrical patterns or of interlacing floral scrolls of different colours. Figs. 67 and 68 illustrate two of these windows. The panes are large compared with those of the sixteenth-century windows, and the lines of plaster that take the place of the lead in our windows are narrow, barely more than one centimetre wide. The glass is set at a distance of from six to seven centimetres from the outer surface of the plaster. On the inside the glass is held in place by a fillet of plaster, bevelled on each edge, and about one centimetre wide and one centimetre thick, covering the joints between the panes. The sixteenth-century windows are made differently. The pattern is, as in the earlier windows, fretted in the plaster, but the glass is set on the outer surface. The panes are much smaller than in the earlier windows. The tunnels, through which the light trickles, are often wider on their inner than on the outer openings, and form cones sloped slightly downwards. The inner surface of the plaster is not flush over the whole area of the window, but is in two planes, one raised a little above the other; the main lines of the design fill the upper plane and the subsidiary lines the lower plane. The colours used are red, blue, green, yellow, and white. The older glass is streaked and filled with bubbles. The more modern windows are in a worse condition than the older windows, partly because they are in more exposed positions, but chiefly because they are not so well made. The older plaster is much harder and seems to have marble dust mixed with it; but analysis is needed to find out the exact composition.

Very little light enters through the older windows of the drum. Through some of the modern windows a good deal still enters. The reason for this is that more dirt has collected on the old windows than on the more modern.

The older a window is the less light comes through it ; for none appears ever to have been cleaned. The light would be subdued in any case, even after cleaning ; because, before reaching the coloured windows it has to penetrate the external grill of pierced tiles and the intermediate windows already described. It is not, however, necessary to assume that these were provided in order to subdue the light. Just as the inner coloured windows were put up to decorate the inside, so were the external grills of pierced tiles put up to decorate the outside ; and the object of the intermediate windows was to give protection from the weather to the inner coloured windows, while allowing as much light as possible to reach the inner windows. For this purpose the glass area of the intermediate windows was made as large as the materials used allowed. Though the intermediate windows have been of use in giving a measure of protection against driving rain, their presence has had disadvantages. They have not prevented dust reaching the outer surface of the inner windows and they have, while preventing all access to the inner windows for cleaning, themselves become caked in dirt, so as still further to reduce light. Nor could the intermediate windows themselves be cleaned because, owing to the outer grills of pierced tiles, they could not be reached conveniently. All the windows, both coloured and intermediate, need careful cleaning and most of them need repair. Glass, where it has fallen, needs renewal. At Hebron, where the old methods of glass-making are still to some extent practised, the glass-workers could probably make good imitations of the old glass. For the repair of the plaster, and for setting the glass, it will be necessary to get workmen from Cairo, where a good deal of similar work has been done under the direction of the 'Comité pour la Conservation des Monuments de l'Art arabe'. For the repair of the coloured windows it will be necessary to

remove, temporarily, both the intermediate windows and the pierced outer grills. The glass of the intermediate windows must be carefully cleaned and the windows re-set, so as to prevent, as far as possible, any dust reaching the inner windows from outside. In replacing the tiles of the external grills, it will be convenient to provide a means whereby access may, in the future, be obtained through them, for the purpose of cleaning, periodically, the glass of the intermediate windows. This can be done by setting, in a metal frame, in such a manner as not to be visible from outside, a square of nine of the pierced tiles. This square could be removed to allow a man to enter and re-set after his work was done. Such an arrangement would also permit the periodic repair of the wire netting set up behind the pierced tiles to prevent pigeons building their nests on the sills. The netting is apt to decay, and no repairs are now possible unless the pierced tiles are cut away to allow access. The actual conditions, then, discourage cleaning and repair and make it unnecessarily costly, or it is neglected; light ceases to enter, pigeons find their way in, and great masses of bird-lime accumulate on the sills, and form, as it were, a sponge for the collection of rain-water.

To clean and to repair the coloured windows, especially those in the drum, is important, not only for the sake of the windows themselves, but also in order that the Dome may again be lighted from the sixteen windows intended for that purpose, and not through the windows opened in the Dome as recently as the German Emperor's visit. It appears that the task of cleaning the drum windows, in order to permit the entrance of light, was then considered too formidable an operation to undertake and that, as light was needed, it was decided to adopt the easier task of opening new windows at the springing of the Dome.

§ 2. *The Preservation of the Plaster Decoration of the Dome and the Mosaics of the Drum*

The preservation of the plaster decoration of the Dome and (though to a less degree) of the mosaics of the drum depends largely upon closing the windows described in the last paragraph as having been opened on the occasion of the German Emperor's pilgrimage.¹

Although the Dome of the Rock stands in a position that, at first sight, would seem to ensure at least a dry floor, even in the wettest weather, yet an examination, made in wet weather, of the marble paving in the neighbourhood of the northernmost of the two columns on the north-western side of the inner octagon, showed that this paving rests upon a bed composed of earth and lime and saturated with moisture. This moisture was not from a leak in the roof. The only other possible source is the rain that falls on the pavement outside the building. The joints of this pavement are in a bad condition and plants have established their roots in thick masses under the stones. It is therefore easy for rain-water to enter. For some reason, as yet unexplained, this water appears to be unable to drain away down the hill as quickly as it collects; and some of it penetrates underneath the building. If the damp under the pavement comes from outside, it would seem to suggest that the foundations of the octagon wall do not everywhere go down to the rock, but are built upon filling. However this may be, damp exists in the building. During the cold weather it is warmer in the building than outside. The damp air rises and condenses on the under surface of the inner Dome and trickles down the painted and gilded plaster ornament. This would not occur if the surface of the inner Dome were not chilled to a temperature low enough to

¹ Since writing the above, this has been done.

permit condensation. Had no windows been made and had the trap-door at the summit of the outer Dome either not existed or been made to fit properly, a cushion of warm air would always have been maintained between the two Domes. The trap-door at the top of the outer Dome appears to date from the repairs carried out in 1874 and the windows are only about twenty years old. Nevertheless they have already caused a good deal of damage. Before they were made the cushion of warm air between the two Domes was produced during the hot summer months, and maintained in the winter, by the frequent sunny days that occur between the rain storms. The water arising from the condensation that now takes place in the winter is damaging not only the plaster ornament of the Dome, but also the mosaics of the drum, for it drips from the Dome on to the projecting cornice above the mosaics and some of it, no doubt, finds its way down into the plaster setting of the mosaics. There is a serious bulge in the plaster ornament of the Dome, showing that for a considerable length it has come away from the boarding to which it was fixed. The part that bulges threatens to fall. It is, then, important to close the windows; and to make the trap-door fit closely; for this purpose its underside should be covered with felt. The leaks in the Dome are, compared with the internal condensation, only to a small extent the cause of damage. To repair the damage will be more difficult than to remove its cause. For the repair of the mosaics it will be necessary to import workmen, either from England or Italy.

The tesserae forming the gold ground are laid in regular horizontal courses one above the other. Each of the tesserae is fixed, not with its axis at right angles to the surface of the wall, but at an angle of about 30 degrees, so that the surface of the gold ground is not a smooth surface, for the face of each course of tesserae is not vertical but sloping, several

courses together making, in section, a zig-zag line. The tesserae composing the floral scrolls and other devices are of black, blue, reddish brown, two greens, and mother-of-pearl. The patterns are outlined in black and their main lines are accentuated by large pieces of mother-of-pearl, introduced among the colours. The tesserae have fallen in a good many places, and imitations in paint have been made. But there is no difficulty in determining what the pattern was on any area from which the tesserae have fallen. It would, with the help of skilled workers, be easy to make the gaps good, and to clean the rest. So much dust has collected on the mosaic that its brilliance is almost entirely obscured.

§ 3. *The Condition of the Internal Marble Covering to the Walls and Piers*

The panelled plinth or dado covering the lower part of the octagon dates from the 1874 repair. At the same time a good deal of other work was done to the marble decoration. The casing in marble boxes of the bases of the columns forming the intermediate octagonal colonnade has already been referred to on p. 18. According to the Sheykh Khalil al Dunuf the marble bases to the columns carrying the drum were also altered, having previously been made up of a number of small pieces of different coloured marbles. These were removed and fixed to the four piers of the drum, where they can now be seen forming a rather unnecessary part of the decoration.

On the whole the marble decoration is in good condition. In some parts the natural veining has been accentuated by means of paint which might be removed with advantage. The brass rings round the bases of the columns under the drum have been painted black. This black painting might also be removed.

V

THE ORIGINAL WINDOWS AND TRACES OF THE FORMER MOSAIC COVERING TO THE OUTER WALLS

WHAT the original windows were like cannot be stated with certainty, but they were probably made of slabs of marble or stone, pierced with patterns. But, whatever may have been the nature of the windows, it is possible, from existing evidence, to state that each opening was filled with a single window and not with three windows as at present; it is also possible to fix both the position occupied by the window in the thickness of the wall and also the thickness of the window itself.

The wall between the face of the marble covering on the inside of the octagon and the outer face of the masonry arch over the window measures 1.30 metres. At present the coloured windows seen from the inside are set flush with the marble wall covering. The intermediate windows already described (Chapter IV, § 1) are set at a distance of about 54 centimetres from the outer face of the inner coloured windows. The outer screen of pierced glazed tiles is set about 14 centimetres back from the face of the tiles bordering the window.

In the opening formed for the southern window of the north-western façade, there are, on the soffit of the semi-

circular stone arch over this opening, traces of the original mosaic that covered the outer walls of the shrine prior to the tile decoration. This fragment of mosaic is bordered, on its inner edge, by tesserae set in a straight line 23 centimetres from the face of the arch. This line marks the junction of the mosaics with the original window. The thickness of this window can clearly be traced on the jamb of the opening, together with remains of the copper attachments by which the window was held in place. The lining, composed of slabs of green and white marble decorating the jambs of the window opening, is still in place, though, owing to the present coloured window being placed flush with the inner surface of the wall, the jambs are not visible from inside the building. The slabs composing this lining stop 15 centimetres from the line of the mosaic. The original window was, then, a single window, 15 centimetres thick, probably of pierced marble, and placed with its inner face 92 centimetres from the face of the marble covering to the internal wall, and with its outer face 23 centimetres from the outer surface of the arch above the opening. Thus on the outside of the window there was a shallow jamb covered with mosaic, and on the inside a jamb four times as deep covered with marble.

Traces of the mosaic exist also on one of the jambs of the eastern window of the drum.

The tesserae vary in size from $\frac{1}{4}$ to 1 centimetre square. They are set in plaster $1\frac{3}{4}$ centimetres thick. The colours used are, in addition to gold, black and white, red, green and blue. The white tesserae appear to be of stone, the rest are of glass.

There is a tradition among the guardians of the building that, when the remains of the mosaic were removed to allow the walls to be prepared for tiles, the mosaics were buried in various places in the Haram area; some under the raised

platforms used as praying places, others under the flights of steps leading from the upper platform on which the shrine stands, down to the lower ground planted with trees. Within the vaulted space under the eastern flight a quantity of fragments and of loose tesserae were found. These have now been placed in the Haram Museum. A good deal more still remains where these came from. The fragments are not large enough to make possible any reconstruction of the design.

VI

THE PORCHES

THE wings that flank the central archway of the north and east porticoes are additions made since the sixteenth century, with the object of providing store-rooms for the service of the building. The idea may have originated when the western entrance was rebuilt in 1775. This porch is also provided with rooms on each side of the entrance. The columns which support the barrel vaults of the north and east entrances are almost entirely embedded in the walls of these additions which have, moreover, hidden the lower part of the neighbouring windows and caused their external sills to be raised. These additions have also spoiled the effect of the Byzantine entrances composed of columns carrying a barrel vault. In the drawing (Fig. 42) giving a conjectural restoration of the northern façade as it may have been in the sixteenth century, the wings flanking the barrel vault have been omitted. Similarly the colonnades flanking the porch on the south façade have been added since the tile decoration was introduced, for tiles can be seen below and

behind the roofs of the wings on each side of the barrel vault. This addition on the south façade consists of columns which, unlike those that carry the vault, are spaced without reference to the piers of the main wall. On the wings of the north portico a Kufic inscription, cut in marble, has been set upside down under the eaves of the roof. Of this inscription other pieces were found in the Najâra and are now in the Museum. It would be worth while to attempt its re-assemblage and decipherment. In the barrel vault of the east porch the original mosaic decoration still exists, but in the south and north porches it has been replaced by seventeenth-century tiles. The bronze-plated outer doors have frames, also plated, that have been adapted, top and bottom, to agree roughly with the lines of the bases and capitals of the columns which carry the barrel vaults over the entrances. These doors appear to have been removed since the sixteenth century, from the openings in the main wall, to their present positions, other doors being provided in the main wall. This was probably done when the side chambers were added. At the same time the inscription, now in the semicircular space above the outer door of the north façade, was removed to its present position from a similar space within the barrel vault over the inner door. The sixteenth-century arrangement can still be seen on the southern façade. The eastern outer door is dated A.H. 973 (A.D. 1575). It was the work, therefore, of Murad III. The northern door looks of the same date. The outer western door bears an inscription saying it was renewed by Suleiman the Magnificent (A.D. 1520-1566). The southern door appears to be of the same date. The inner doors of the northern, eastern, and western porches are undated, but are clearly later than the outer doors and may be attributed either to the reign of Abdul Hamid I (1773-1789), or to that of Mahmud II (1808-1861). Abdul Hamid I rebuilt

the western entrance and Mahmud II probably added the flanking porticoes to the southern porch. There is an inscription over the arch of the western entrance to the following effect :

سلطاننا عبد الحميد	قد جدد الملك التقى
تسقيفه صحن الوصيد	ذالباب و الكاشاني مع
حقي محمد مير سعيد	باميين عبد صادق
تعميره بيتاً مجيد	سر الحميد ماريخ

‘ The King, the Fearer of God, our Sultan Abd al Hamid, renewed this door and the tiles as well as its roof and the floor of the entrance by (the hand of) the trusty Abd es Sadik Haky Muhammed Mir Sayyid. In a chronogram the secret of al Hamid is repairing a noble House.’ The date is given in the letters forming the words تعميره بيتاً مجيد. Of these words each letter has its numerical equivalent, thus:

ت = 400 : ع = 70 : م = 40 : ي = 10 : ر = 200 : ه = 5 :
 ب = 2 : ي = 10 : ت = 400 : ا = 1 : م = 40 : ج = 3 :
 ي = 10 : ه = 4 = A.H. 1195 (A.D. 1780).

This year was nine years before the death of Sultan Abd al Hamid I.

VII

INSCRIPTIONS ON THE TILES

THE two chief inscriptions on the tiles have already been described, but it may be of interest to include here a translation of the first twenty verses of the 'Night Journey', the inscription that surrounds the Drum, and the chapter known as the 'Ya Sîn', that surrounds the octagon.

The 'Night Journey' begins and ends on the south-east side of the Drum. Fig. 47 shows its beginning and its end. The verses given are as follows:

'In the name of the most merciful God. Praise be to
'him, who transported his servant by night from the Sacred
'Temple of Mecca to the farther Temple of Jerusalem, the
'circuit of which we have blessed, that we might show him
'some of our signs; for God is he who heareth and seeth.
'And we gave unto Moses the book of the law, and appointed
'the same to be a direction unto the children of Israel, com-
'manding them, saying, Beware that ye take not any other
'patron besides me. O posterity of those whom we carried
'in the ark with Noah: verily he was a grateful servant.
'And we expressly declared unto the children of Israel in
'the book of the law, saying, Ye will surely commit evil
'in the earth twice, and ye will be elated with great insolence.
'And when the punishment threatened for the first of those
'transgressions came to be executed, we sent against you our
'servants, endued with exceeding strength in war, and they
'searched the inner apartments of your houses; and the
'prediction became accomplished. Afterwards we gave you

‘ the victory over them, in your turn, and we granted you
‘ increase of wealth and children, and we made you a more
‘ numerous people, saying, If ye do well, ye will do well to
‘ your own souls ; and if ye do evil, ye will do it unto the
‘ same. And when the punishment threatened for your latter
‘ transgression came to be executed, we sent enemies against
‘ you to inflict you, and to enter the temple, as they entered
‘ it for the first time, and utterly to destroy that which they
‘ had conquered. Peradventure your Lord will have mercy
‘ on you hereafter ; but if ye return to transgress a third
‘ time ; we also will return to chastise you : and we have
‘ appointed hell to be the prison of the unbelievers. Verily
‘ this Koran directeth unto the way that is most right, and
‘ declareth unto the faithful, who do good works, that they
‘ shall receive a great reward ; and that for those who believe
‘ not in the life to come, we have prepared a grievous
‘ punishment. Man prayeth for evil, as he prayeth for
‘ good ; for man is hasty. We have ordained the night and
‘ the day for two signs of our power ; afterwards we blot
‘ out the sign of the night, and we cause the sign of the day
‘ to shine forth, that ye may endeavour to obtain plenty
‘ from your Lord by doing your business therein, and that
‘ ye may know the number of the years and the computa-
‘ tion of time ; and everything necessary have we explained
‘ by a perspicuous explication. The fate of every man have
‘ we bound about his neck ; and we will produce unto him,
‘ on the day of resurrection, a book wherein his actions shall
‘ be recorded : it shall be offered him open, and the angels
‘ shall say unto him, Read thy book : thine own soul will be
‘ a sufficient accountant against thee this day. He who shall
‘ be rightly directed shall be directed to the advantage of
‘ his own soul ; and he who shall err, shall err only against
‘ the same : neither shall any laden soul be charged with
‘ the burden of another. We did not punish any people

‘until we had first sent an apostle to warn them. And when
 ‘we resolved to destroy a city, we commanded the inhabi-
 ‘tants thereof, who lived in affluence, to obey our apostle ;
 ‘but they acted corruptly therein : wherefore the sentence
 ‘was justly pronounced against that city ; and we destroyed
 ‘it with an utter destruction. And how many generations
 ‘have we consumed since Noah ? For thy Lord sufficiently
 ‘knoweth and seeth the sins of his servants. Whosoever
 ‘chooseth this transitory life, we will bestow on him therein
 ‘beforehand that which we please ; on him, namely, whom
 ‘we please : afterwards we will appoint him hell for his
 ‘abode ; and he shall be thrown into the same to be scorched,
 ‘covered with ignominy, and utterly rejected from mercy.
 ‘But whosoever chooseth the life to come, and directeth
 ‘his endeavour towards the same, being also a true
 ‘believer’¹

The last word ‘believer’ is on the southern side of the south-east buttress. The inscription must have been continued and completed elsewhere. As already suggested this was probably done on the octagon.

The present inscription round the octagon gives the chapter known as the ‘Ya Sîn’. The meaning of these letters is not known. This chapter is said to have been called by Muhammed himself ‘the heart of the Koran’. It is read to dying persons and is often found on the walls of mosques. Sale’s translation is as follows :

‘In the name of the most merciful God, I swear by the
 ‘instructive Koran, that thou art one of the messengers of
 ‘God, sent to show the right way. This is a revelation
 ‘of the most mighty, the merciful God ; that thou mayest
 ‘warn a people whose fathers were not warned, and who live
 ‘in negligence. Our sentence hath justly been pronounced
 ‘against the greater part of them ; wherefore they shall not

¹ Sale’s translation.

‘ believe. We have put yokes on their necks, which come
‘ up to their chins; and they are forced to hold up their
‘ heads: and we have set a bar before them, and a bar behind
‘ them; and we have covered them with darkness; where-
‘ fore they shall not see. It shall be equal unto them,
‘ whether thou preach unto them or do not preach unto
‘ them; they shall not believe. But thou shalt preach with
‘ effect unto him only who followeth the admonition of the
‘ Koran, and feareth the Merciful in secret. Wherefore bear
‘ good tidings unto him, of mercy, and an honourable reward.
‘ Verily we will restore the dead to life, and will write down
‘ their works, which they shall have sent before them, and
‘ their footsteps which they shall have left behind them;
‘ and everything do we set down in a plain register. Propound
‘ unto them as an example the inhabitants of the city of
‘ Antioch, when the apostle Jesus came thereto; when we
‘ sent unto them two of the said apostles; but they charged
‘ them with imposture. Wherefore we strengthened them
‘ with a third. And they said, Verily we are sent unto you
‘ by God. The inhabitants answered, Ye are no other than
‘ men, as we are; neither hath the Merciful revealed any-
‘ thing unto you; ye only publish a lie. The apostles replied,
‘ Our Lord knoweth that we are really sent unto you: and
‘ our duty is only public preaching. Those of Antioch said,
‘ Verily we presage evil from you; if ye desist not from
‘ preaching, we will surely stone you, and a painful punish-
‘ ment shall be inflicted on you by us. The apostles answered,
‘ Your evil presage is with yourselves; although ye be warned,
‘ will ye persist in your errors? Verily ye are a people who
‘ transgress exceedingly. And a certain man came hastily
‘ from the farther parts of the city, and said, O my people,
‘ follow the messengers of God; follow him who demandeth
‘ not any reward of you; for these are rightly directed. What
‘ reason have I that I should not worship him who hath

‘created me? For unto him shall ye return. Shall I take
‘other Gods besides him? If the Merciful be pleased to afflict
‘me, their intercession will not avail me at all, neither can
‘they deliver me: then should I be in a manifest error.
‘Verily I believe in your Lord; wherefore hearken unto
‘me. But they stoned him: and as he died, it was said unto
‘him, Enter thou into Paradise. And he said, O that my
‘people knew how merciful God hath been unto me! For
‘he hath highly honoured me. And we sent not down
‘against his people, after they had slain him, an army from
‘heaven, and behold, they became utterly extinct. O the
‘misery of men! No apostle cometh unto them, but they
‘laugh him to scorn. Do they not consider how many
‘generations we have destroyed before them? Verily they
‘shall not return unto them: but all of them in general
‘shall be assembled before us. One sign of the resurrection
‘unto them is the dead earth: we quicken the same by the
‘rain, and produce thereout various sorts of grain, of which
‘they eat. And we make therein gardens of palm trees, and
‘vines; and we cause springs to gush forth in the same;
‘that they may eat of the fruits thereof and of the labour
‘of their hands. Will they not therefore give thanks? Praise
‘be unto him who hath created all the different kinds, both
‘of vegetables which the earth bringeth forth and of their
‘own species, by forming the two sexes, and also the various
‘sorts of things which they know not. The night also is
‘a sign unto them; we withdraw the day from the same,
‘and behold, they are covered with darkness: and the sun
‘hasteneth to his place of rest. This is the disposition of the
‘mighty, the wise God. And for the moon have we appointed
‘certain mansions, until she change and return to be like the
‘old branch of a palm tree. It is not expedient that the sun
‘should overtake the moon in her course; neither doth the
‘night outstrip the day; but each of these luminaries moveth

‘in a peculiar orbit. It is a sign also unto them, that we
‘carry their offspring in the ship filled with merchandise ;
‘and that we have made for them other conveniences like
‘unto it, whereon they ride. If we please, we drown them,
‘and there is none to help them ; neither are they delivered,
‘unless through our mercy, and that they may enjoy life
‘for a season. When it is said unto them, Fear that which
‘is before you and that which is behind you, that ye may
‘obtain mercy ; they withdraw from thee ; and thou dost
‘not bring them one sign, of the signs of their Lord, but
‘they turn aside from the same. And when it is said
‘unto them, Give alms of that which God hath bestowed
‘on you ; the unbelievers say unto those who believe, by
‘way of mockery, Shall we feed him whom God can feed,
‘if he pleaseth ? Verily ye are in no other than manifest
‘error. And they say, When will this promise of the resur-
‘rection be fulfilled, if ye speak truth ? They only wait for
‘one sounding of the trumpet, which shall overtake them
‘while they are disputing together ; and they shall not have
‘time to make any disposition of their effects, neither shall
‘they return to their family. And the trumpet shall be
‘sounded again, and behold they shall come forth from their
‘graves, and hasten unto their Lord. They shall say, Alas
‘for us ! Who hath awakened us from our bed ? This is
‘what the Merciful promised us ; and his apostles spoke
‘the truth. It shall be but one sound of the trumpet, and
‘behold, they shall be all assembled before us. On this day
‘no soul shall be unjustly treated in the least ; neither shall
‘ye be rewarded, but according to what ye shall have wrought.
‘On this day the inhabitants of Paradise shall be wholly
‘taken up with joy : they and their wives shall rest in shady
‘groves, leaning on magnificent couches. There shall they
‘have fruit and they shall obtain whatever they desire.
‘Peace shall be the word spoken unto the righteous, by a

‘merciful Lord: but he shall say unto the wicked, Be ye
‘separated this day, O ye wicked, from the righteous. Did
‘I not command you, O sons of Adam, that ye should not
‘worship Satan; because he was an open enemy unto you?
‘And did I not say, Worship me, this is the right way?
‘But now he hath seduced a great multitude of you: did ye
‘not therefore understand? This is hell with which ye were
‘threatened; be ye cast into the same this day, to be burned;
‘for that ye have been unbelievers. On this day we will
‘seal up their mouths, that they shall not open them in
‘their own defence; and their hands shall speak unto us,
‘and their feet shall bear witness of that which they have
‘committed. If we pleased we could put out their eyes, and
‘they might run with emulation in the way they use to
‘take; and how should they see their error? And if we
‘pleased we could transform them into other shapes, in their
‘places where they should be found; and they should not
‘be able to depart: neither should they repent. Unto whom-
‘soever we grant a long life, him do we cause to bow down
‘his body through age. Will they not therefore understand?
‘We have not taught Muhammed the art of poetry; nor is it
‘expedient for him to be a poet. This book is no other than
‘an admonition from God, and a perspicuous Koran; that
‘he may warn him who is living; and the sentence of con-
‘demnation will be justly executed on the unbelievers. Do
‘they not consider that we have created for them, among
‘the things which our hands have wrought, cattle of several
‘kinds, of which they are possessors; and that we have put
‘the same in subjection under them? Some of them are for
‘their riding; and on some of them do they feed; and they
‘receive other advantages therefrom; and of their milk do
‘they drink. Will they not, therefore, be thankful? They
‘have taken other gods, besides God, in hopes that they may
‘be assisted by them; but they are not able to give them

‘any assistance; yet are they a party of troops to defend
‘them. Let not their speech, therefore, grieve thee; we
‘know that which they privately conceal, and that which
‘they publicly discover. Doth not man know that we have
‘created him of seed? Yet behold, he is an open disputer
‘against the resurrection: and he propoundeth unto us a
‘comparison, and forgetteth his creation. He saith, Who
‘shall restore bones to life, when they are rotten? Answer,
‘He shall restore them to life, who produced them the first
‘time; for he is skilful in every kind of creation: who
‘giveth you fire out of the green tree, and behold, ye kindle
‘your fuel from thence. Is not he who hath created the
‘heavens and the earth, able to create new creatures like
‘unto them? Yea, certainly; for he is the wise Creator. His
‘command, when he willet a thing, is only that he saith
‘unto it, Be! and it is. Wherefore praise be unto him, in
‘whose hand is the Kingdom of all things, and unto whom
‘ye shall return at the last day.’

Other Koranic Inscriptions

The other quotations from the Koran are as follows:

(i) On the north-east façade there is a series of six panels containing a portion of Chapter IX, entitled ‘The Declaration of Immunity’. The quotation is completed upon a seventh panel under the arch of the northern blind bay of the eastern façade.

In all three verses the seventeenth, eighteenth, and nineteenth of the chapter are given. The inscription begins with the following words:

‘God the most high said in his glorious Book, But he
‘only shall visit the temples of God, who believeth in God
‘and the last day, and is constant in prayer, and payeth

‘ the legal alms, and feareth God alone. These perhaps may
 ‘ become of the number of those who are rightly directed.
 ‘ Do ye reckon the giving drink to the pilgrims, and the
 ‘ visiting of the holy places, to be actions as meritorious as
 ‘ those performed by him who believeth in God and the last
 ‘ day, and fighteth for the religion of God? They shall not
 ‘ be held equal with God: for God directeth not the un-
 ‘ righteous people. They who have believed, and fled their
 ‘ country, and employed their substance and their persons
 ‘ in the defence of God’s true religion, shall be in the highest
 ‘ degree of honour with God; and these are they who shall
 ‘ be happy.’

(ii) On the north-west façade under the arch of the northern blind bay is a panel of early nineteenth-century manufacture containing the words:

من امن بالله و يوم الاخر

‘ Who believeth in God and the last day.’

In the southern blind bay of the same façade there was probably another panel containing the words:

‘ But he only shall visit the temples of God.’

(iii) On a large panel on the main wall above the northern entrance, commonly known as the Gate of Paradise, is the seventy-third verse of Chapter XXXIX, entitled ‘ The Troops ’.

‘ But those who shall have feared their Lord shall be
 ‘ conducted by troops towards paradise, until they shall
 ‘ arrive at the same; and the gates thereof shall be ready
 ‘ set open; and the guards thereof shall say unto them,
 ‘ Peace be on you! Ye have been good: wherefore enter ye
 ‘ into paradise, to remain therein for ever.’ The second line
 is much defaced and contains a quotation from an unidentified source. The last words are: و هاجراه النبي الكريم.

Inscriptions on Tiles

99

In the angles left by the interlacing ornament at either end of the inscription (Fig. 34) are the following words :

On the right hand at the top	اشرف
On the right hand at the bottom	بالمدينه (؟)
On the left hand at the top	المكان
On the left hand at the bottom	البقا الله

(iv) On the south façade which faces towards Mecca, and on the main wall in the semicircular space above the door is an inscription from the Chapter entitled 'The Cow'. The extract concerns the direction towards which the followers of the Prophet are to turn their faces when they pray. Sale's translation of these verses is as follows :

'We appointed the Keblah towards which thou didst
'formerly pray, only that we might know him who followeth
'the apostle, from him who turneth back on his heels;
'though this change seem a great matter, unless unto those
'whom God hath directed. But God will not render your
'faith of none effect; for God is gracious and merciful unto
'man. We have seen thee turn about thy face towards
'heaven with uncertainty, but we will cause thee to turn
'thyself towards a Keblah that will please thee. Turn there-
'fore thy face towards the holy temple of Mecca; and
'wherever ye be, turn your faces towards that place. They
'to whom the scripture hath been given, know this to be
'truth from their Lord. God is not regardless of that which
'ye do. Verily although thou shouldst show unto those
'to whom the scripture hath been given all kinds of signs,
'yet they will not follow thy Keblah, neither shalt thou
'follow their Keblah; nor will one part of them follow
'the Keblah of the other. And if thou follow their desires,
'after the knowledge which hath been given thee, verily
'thou wilt become one of the ungodly.'

Besides the Koranic quotations there are a number of pious exclamations inscribed on the tiles.

Dome of the Rock

(i) الله الباقي 'God the Eternal,' occurs several times. On the east façade it is on a panel at the top of the second pier from the right; again on the panel above the second pier from the south. On the south façade a central panel on the main wall above the entrance is flanked on either side by a panel with this inscription, but the words, on the western side, are written as seen in a looking-glass.

(ii) يا ارحم الرحمين 'O Most Merciful of those who show 'Mercy,' is on a panel in the middle of the bottom band of the parapet wall on the north-west façade.

(iii) لا اله الا الله حقًا حقًا 'Verily, verily, there is no God 'but God,' also occurs several times, on a panel at the top of the third pier from the right on the eastern façade. On the south façade on a panel above the third pier from the left and again on a panel above the third pier from the right.

(iv) بسم الله الرحمن الرحيم 'In the name of God the Merciful and the Compassionate,' occurs twice, both times over entrances, as echoing the words of those who cross the threshold. One of the panels is above the eastern entrance and the other is above the southern entrance.

(v) توكلت على الله 'I have put my trust in God,' is on a panel on the west façade in the architrave above the third pier from the left.

(vi) صخره بيت المقدس من الجنة ١٢٣٣ 'Rock, Holy House 'from Paradise—1233,' is on a panel in the architrave above the third pier from the right on the west façade.

(vii) كلما دخل عليها زكريا المعراب 'Whenever Zacharias 'entered the sanctuary to see her' (Koran), is in the architrave over the central bay of the south-west façade.

(viii) حسبي الله وحده وكفى 'God is enough for me and 'sufficient.' This is on a panel to the right of (vii).

(ix) يا الله 'O God,' is on a panel to the left of (vii) and

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again on the south-east façade on a panel above the third pier from the right.

(x) انا مدينة العلم و علي بابها 'I am the City of Knowledge 'and Aly is the Gate thereof,' occurs twice on panels flanking the Bismillah above the eastern entrance.

(xi) لا اله الا الله ايمانا و صدقا 'There is no God but God in 'Faith and in Truth,' is found in several places; on the east façade on a panel above the third pier from the south and on a panel under the arch of the southern blind bay, on the south-east façade on a panel above the fourth pier from the left.

(xii) يا قاضي الحاجات 'O Supplier of needs,' is on a panel on the south façade.

There are also several panels recording the work or the name of individual artists who have worked on the tiles, these all date from the early nineteenth century.

(i) لا اله الا الله محمد رسول الله الشفاعة يا محمد حرره العبد (i) 'There is no God but God and 'Muhammed is his Prophet. Have pity O Muhammed, the 'weak slave, Muhammed Darweesh, wrote this—1233' (= A.D. 1818), is on the north-west façade on the middle panel of the top band of the parapet wall.

(ii) قد اشتغل بنقش هذا القيشاني الفقير يوسف امين بن مصطفى اعا (ii) 'The poor Yusuf Amin son of Mustafa Agha el 'Mamoor worked on the painting of this title—1233' (= A.D. 1818). This Mustafa was the grandfather of Ishak Darweesh, now living in Jerusalem and brother of Muhammed Darweesh mentioned under (i).

Yusuf Amin's name is also found on tiles now in the Museum that formed part of a great attempt made in the early nineteenth century to renew the 'Ya Sîn' inscription round the octagon.

The inscription quoted above is on the south-east façade on a panel above the second pier from the left.

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(iii) On the south façade and in the lowest band of the parapet wall are several panels, each beginning with the name of an individual, such as خليل ابن محمد Khalil ibn Muhammed; Othman ibn Muhammed; Muhammed ibn Yusuf; Musa ibn Hassan; Othman ibn Hassan; Othman ibn Hussein. Each of these took a part, no doubt, in the great repair carried out in the early nineteenth century, and each permitted himself to record in a somewhat permanent fashion, not only his testimony to the Unity of God, but also his name.

(iv) 'The pilgrim Ni'amat Allah Khaukazy made this—1233,' is on a panel under the western blind bay of the southern façade.

(v) 'The first of the two Keblahs 'and the third of the Sanctuaries,' is an early nineteenth-century inscription on a panel on the south façade.

The most important inscription historically is the one in the semicircular space over the north door. It is as follows:

قد جدد بحمد الله قبة الصخرة من بيته المقدس الفاتحة بناءها وبهاءها
[.....] في خلال ظلال دولته السلطان الأعظم والخاقان الأكرم واسطة عقد
الخلافة بالنص والبرهان أبي الفتوحات سليمان خان بن السلطان المعروف
بالإحسان أبي النصر سليم خان المخصوص بالمآثر والتأييد صاحب المغاخر بن
السلطان بايزيد بن السلطان المجاهد الأمجد السلطان محمد بن عثمان سحت
على تراهم سحب الرضوان فأعان اليها ذلك البهاء القديم [..] حذاف
المهندسين تاريخًا في ٩٥٩ فجعلوه أحسن [..] قد تشرف بكتابتها عبد
الله التبريزي *

This is difficult to translate, but the general sense seems to be as follows:

'By the Grace of God this structure of superlative 'splendour, the Dome of the Rock of God's Holy House,

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‘was renovated [.] in the days of the power of the
‘mighty Sultan, the noble Ruler, the Binder of the Khalifate
‘by text and proof, the Conqueror, Suleiman Khan, the
‘son of the sultan famed for his munificence, the victorious
‘Selim Khan, of incomparable memory, the most illustrious
‘leader, the son of Sultan Bayazid, the son of the warring
‘and august Sultan Muhammad ibn Othman, may divine
‘favour rain upon their tombs. Thus was restored to it
‘(i.e. the Dome) its ancient splendour [.] the most
‘skilful architects in the year 959 they made it more
‘beautiful [.]. The honour of writing this has
‘fallen to Abdullah Tabrizi.’

It is to be regretted that the inscription is much defaced
and that it is, in part, undecipherable.

VIII

POSTSCRIPT

THE above was written in June 1919. At that time Moslem affairs in Palestine were disorganized. The war, by cutting the country off from all connexion with Constantinople, had deprived the local legal and religious hierarchies of their administrative head. In the body that was left there was naturally some sense of confusion and perplexity.

Prior to the war the 'Awkaf' or religious endowments, the revenues of which are allotted for the maintenance of sacred buildings such as the Dome of the Rock, were under the control of the Ministry of Awkaf in Constantinople; and it was to that ministry that the local guardians of the Dome of the Rock had been accustomed to look not only for the funds needed periodically for repairs but also for the technical advice and guidance no less necessary for the proper upkeep of their charge. They were left by the war in a position of great difficulty. They were without adequate authority; without administrative or technical organization; without funds; and, at the same time, fully responsible for the preservation of one of the most famous as well as one of the most sacred buildings in Islam.

An adequate substitute for the administrative machinery that had been shattered by the war could not be devised and set up in a moment, more especially in the distracted political state into which Palestine fell, and has remained,

since the war. Had the necessary technical organization existed and had funds been available, these would not by themselves have been enough to justify or permit the initiation of important works of repair without the control of a regularly constituted administrative body representative of the Moslem population of Palestine. It was not till December 1921 that such a body was evolved. At that date a Supreme Moslem Council was formally constituted by election. Al Hajj Amin Muhammed Effendi al Husaini, Mufti of Jerusalem, and a member of one of the oldest and most revered families in Palestine, was elected President of the Council.

After the formation of the Supreme Moslem Council there was much to be done before any extensive work of repair and preservation could be undertaken. The Council had to provide itself with offices, to find and appoint a staff, to organize its work in all its branches, legal, financial, religious, and technical. The formation of a technical branch able to make a serious study of the Dome of the Rock and of the other sacred or historic buildings in the Noble Sanctuary, able also to prepare plans and estimates and to control the execution of works, was one of the first cares of the President and his Council. They were fortunate in obtaining the services of a distinguished architect, Kemal ed Din Bey, under whose direction a highly competent technical office has been formed. The detailed studies for the long-needed work of preservation are now well advanced; craftsmen, materials, and funds are being collected not only in Palestine but also in other Islamic countries.

Thus, after an anxious period of hard reconstructive work following upon a war which went far towards shattering their organization as a community, and which has been succeeded by a prolonged period of uninterrupted political unrest, the Moslems of Palestine are entitled to believe that

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the great efforts they have made in the interests of their Holy Places will be crowned with success, and to hope that under the 'protecting shadow' of Great Britain, no less than under that of the Turk, Suleiman the Magnificent, nearly four centuries ago, the structure and the decoration of the Dome of the Rock may be properly cared for and its beauty religiously preserved.

October 1923.



SEAL OF THE ORDER OF THE KNIGHTS TEMPLAR

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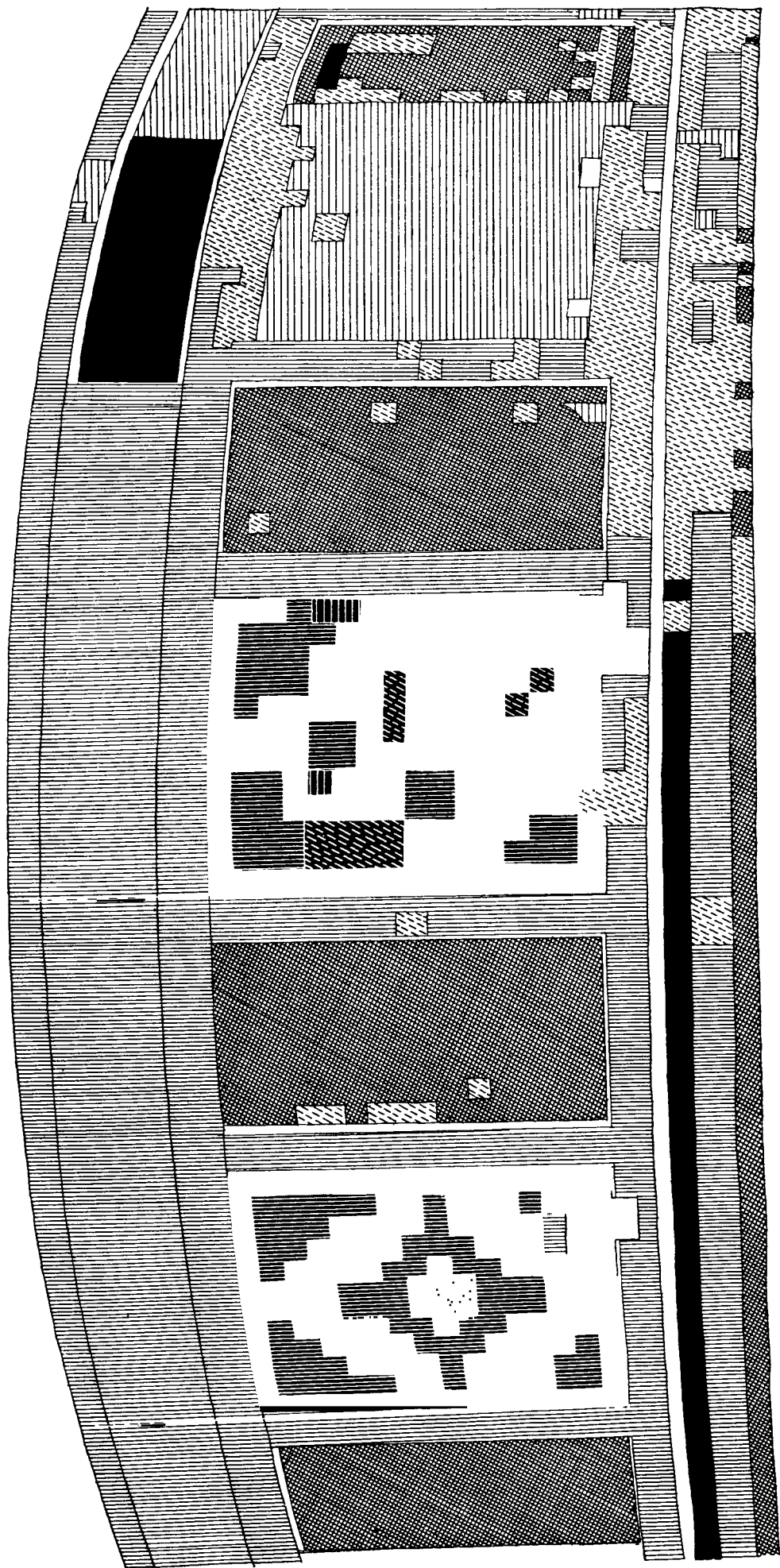


Fig. 43 bis. North face of Drum

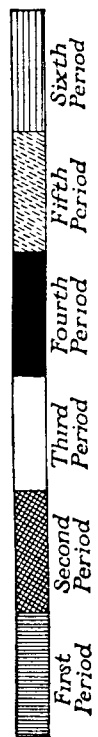


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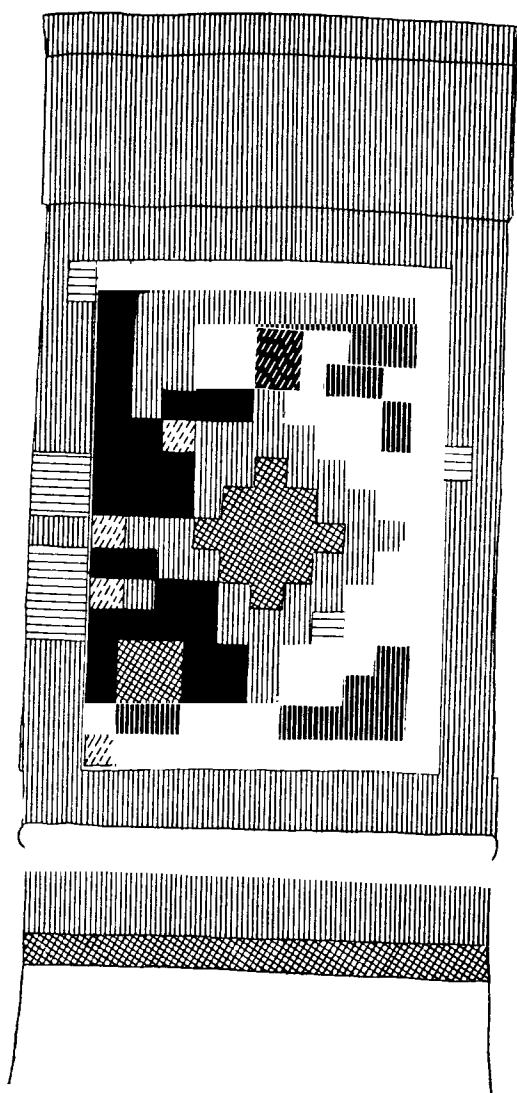


Fig. 44 bis. North-East buttress of Drum

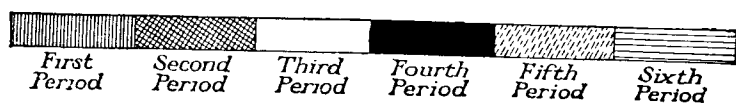


Fig. 44 bis

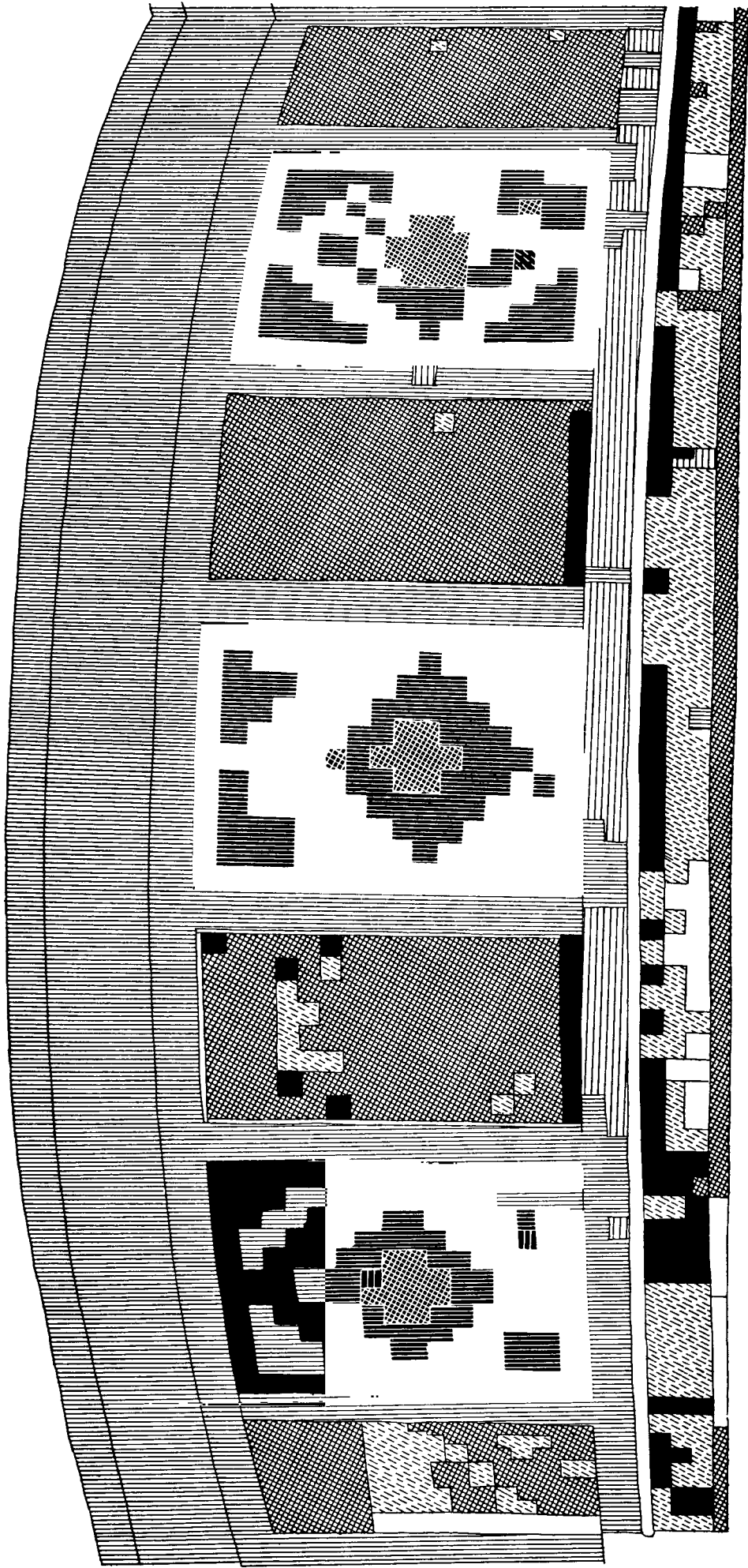


Fig. 45 bis. East face of Drum

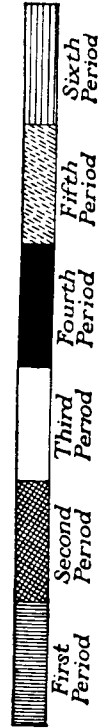


Fig. 45 bis

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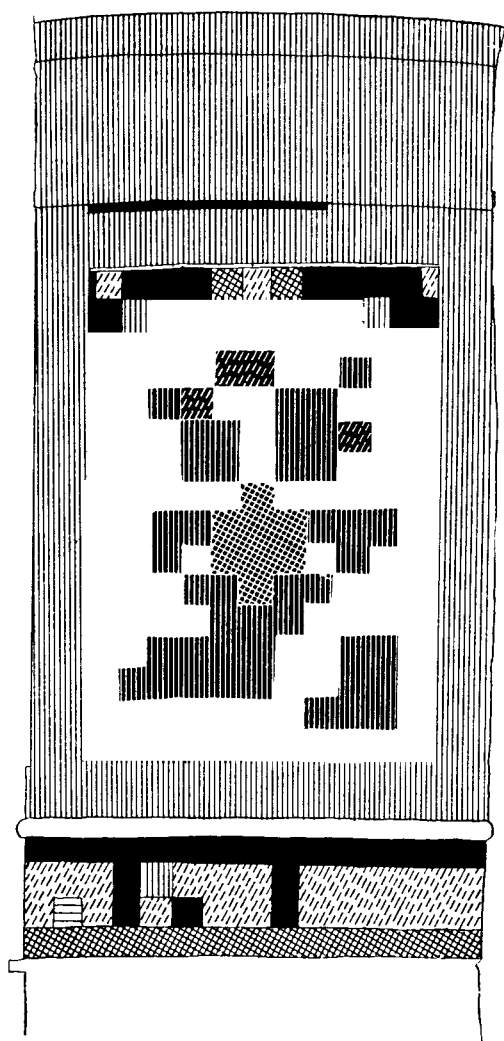


Fig. 46 bis. South-East buttress of Drum

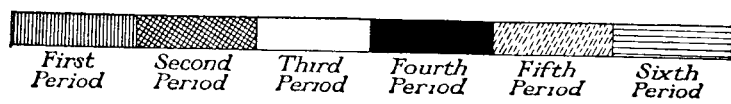


Fig. 46 bis

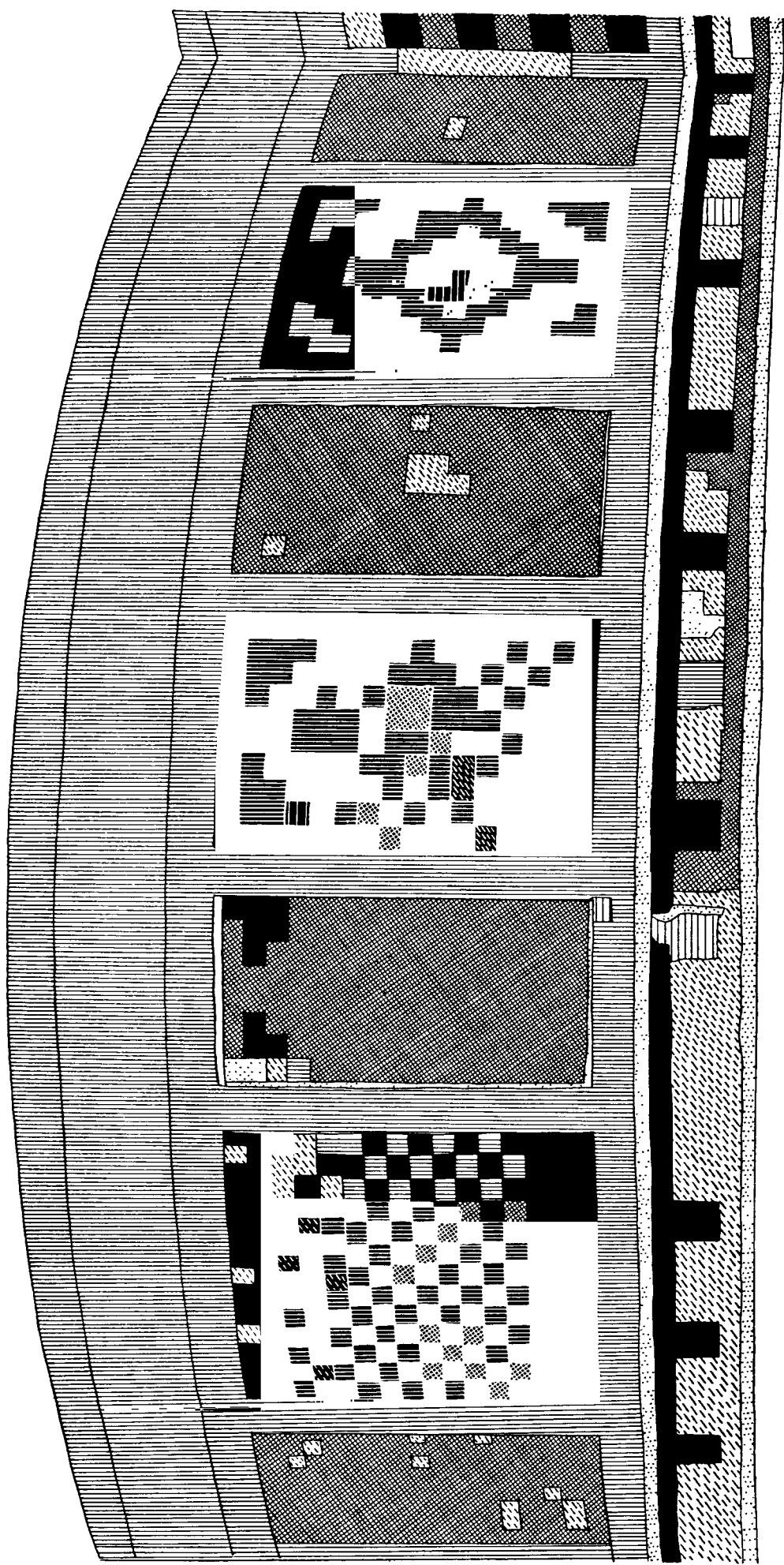


Fig. 47 bis. South face of Drum

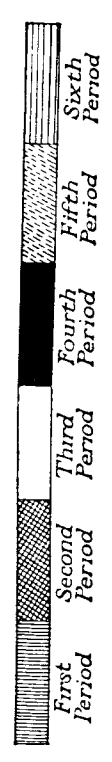


Fig. 47 bis

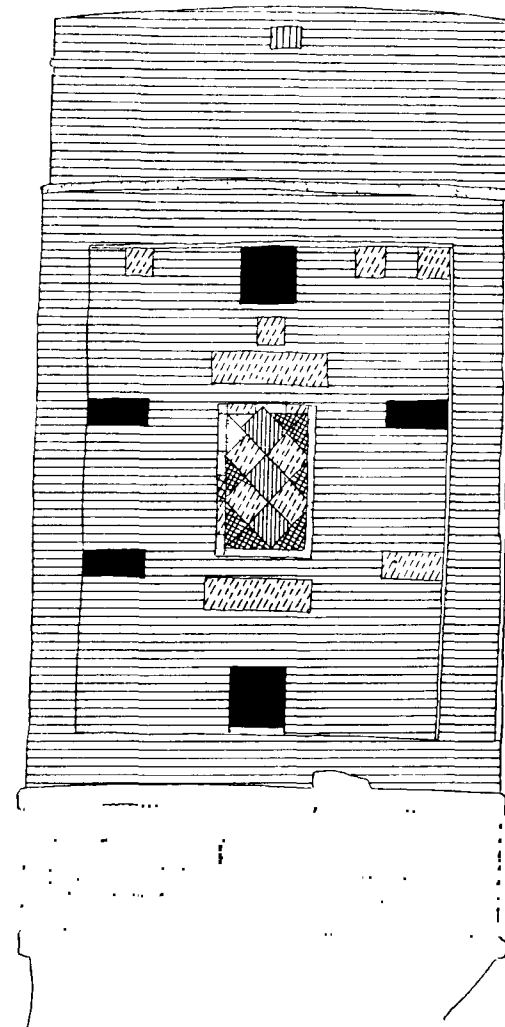


Fig. 48 bis. South-West buttress of Drum

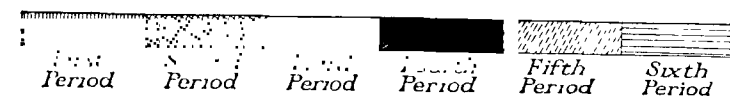


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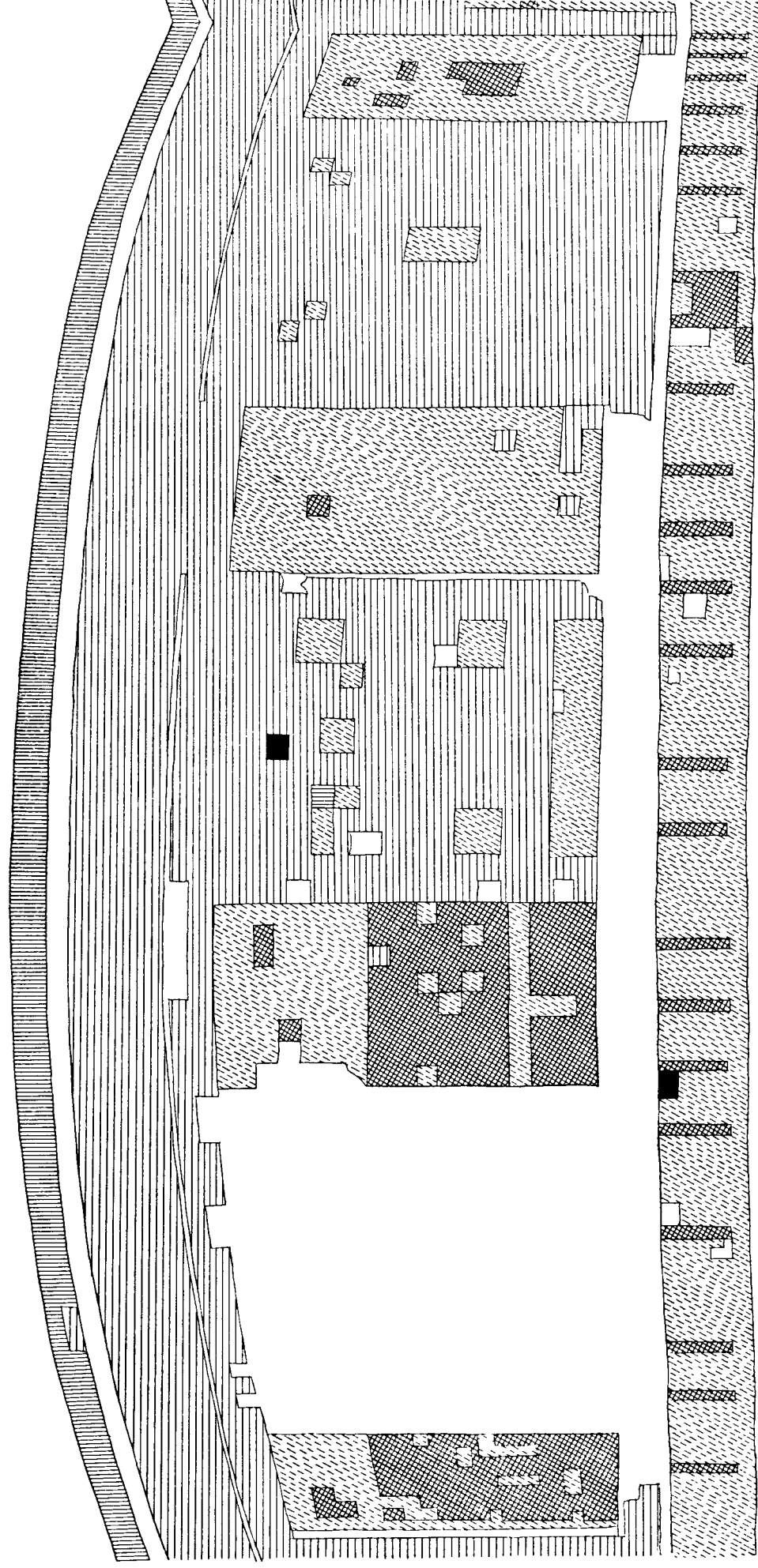


Fig. 49 bis. West face of Drum



Fig. 49 bis

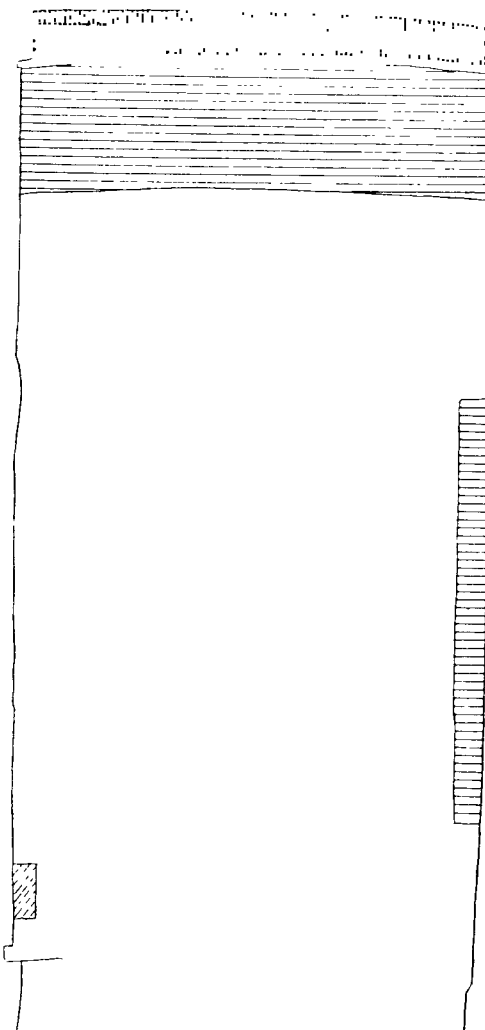


Fig. 50 bis. North-West buttress of Drum

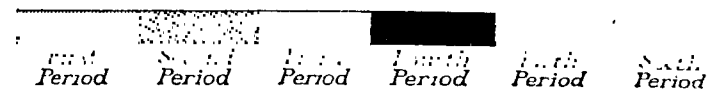


Fig. 50 bis

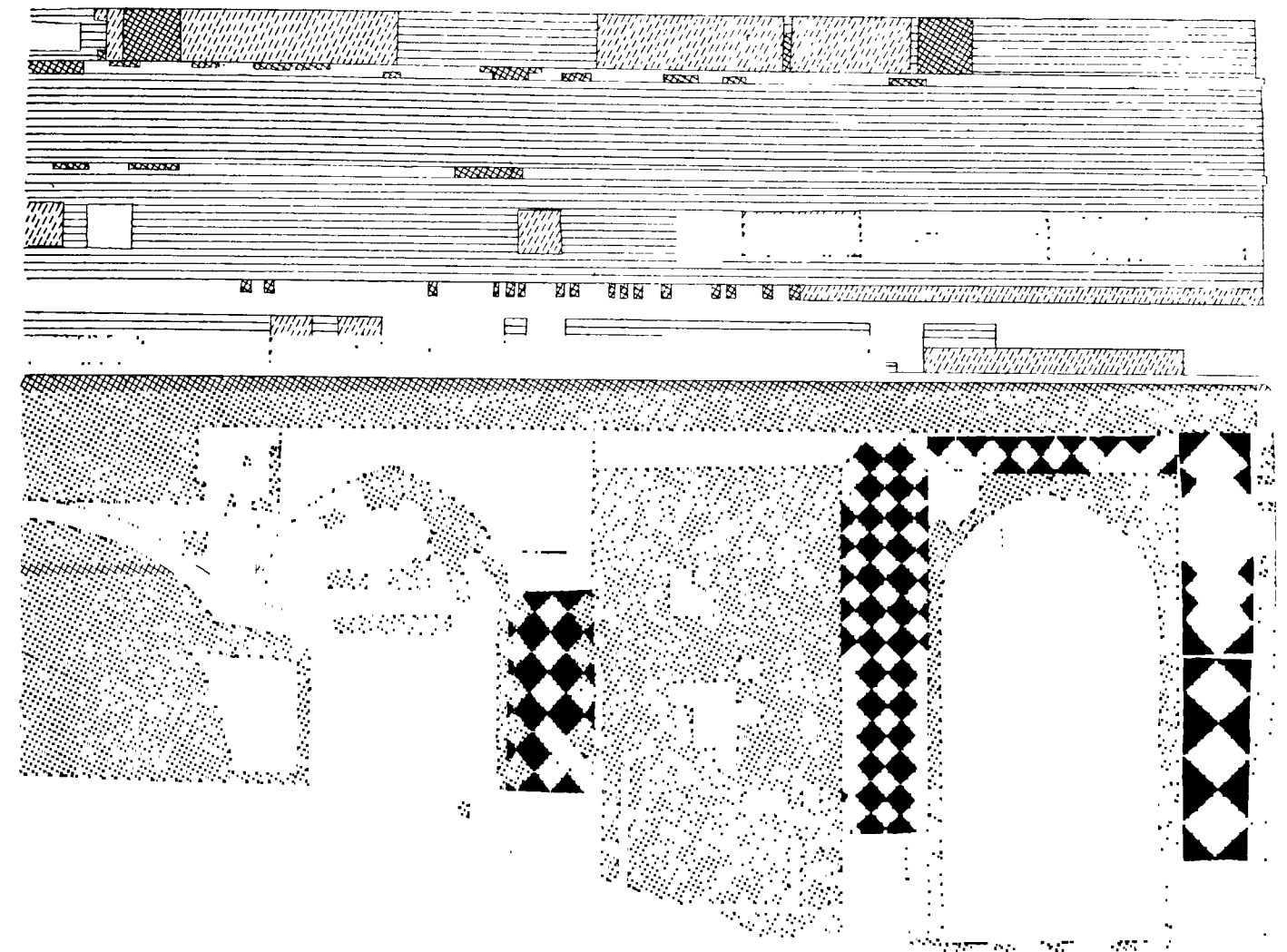


Fig. 51 bis. North face of Octagon. Western half

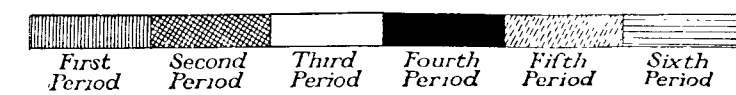


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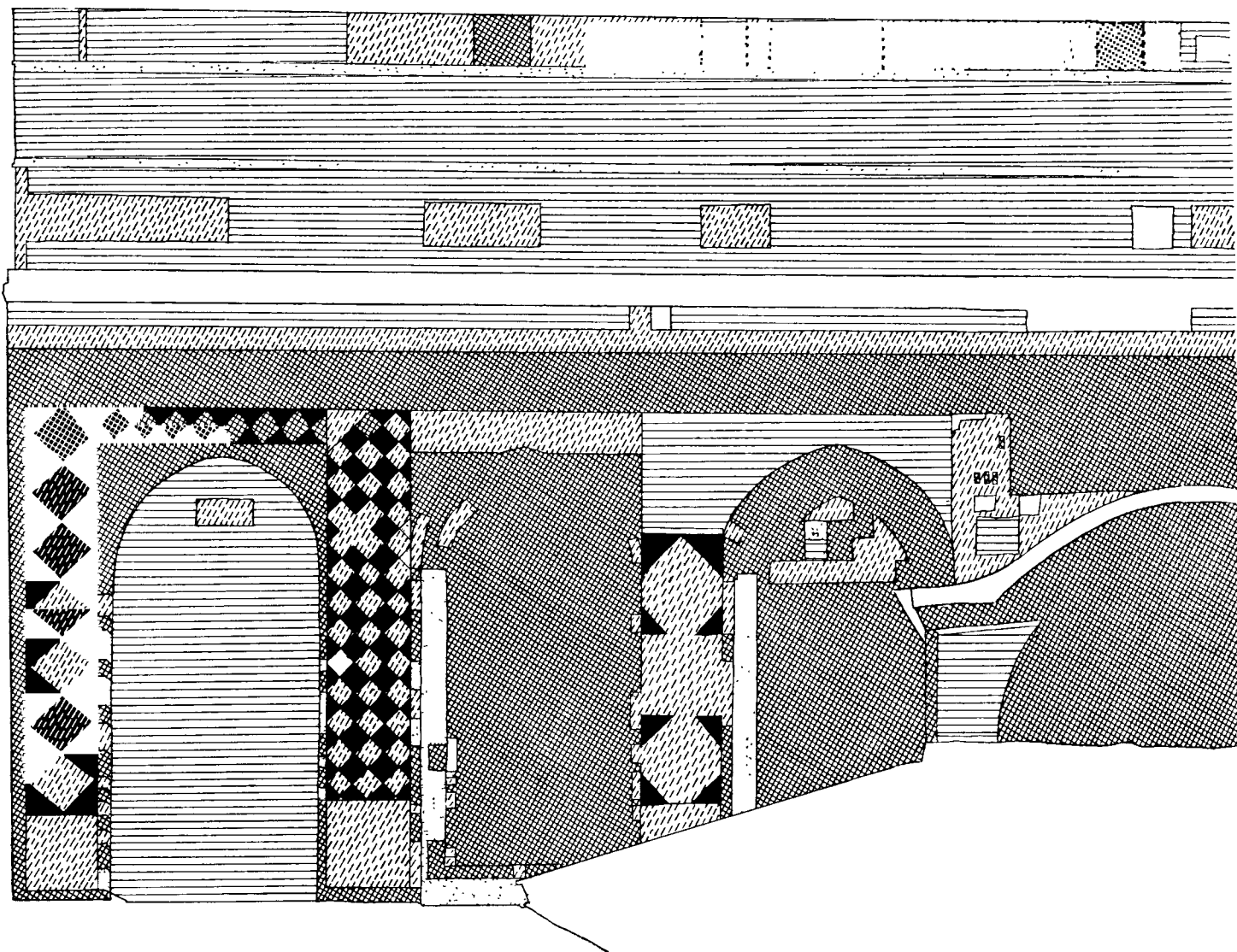


Fig. 52 bis. North face of Octagon. Eastern half

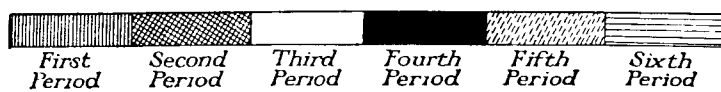


Fig. 52 bis

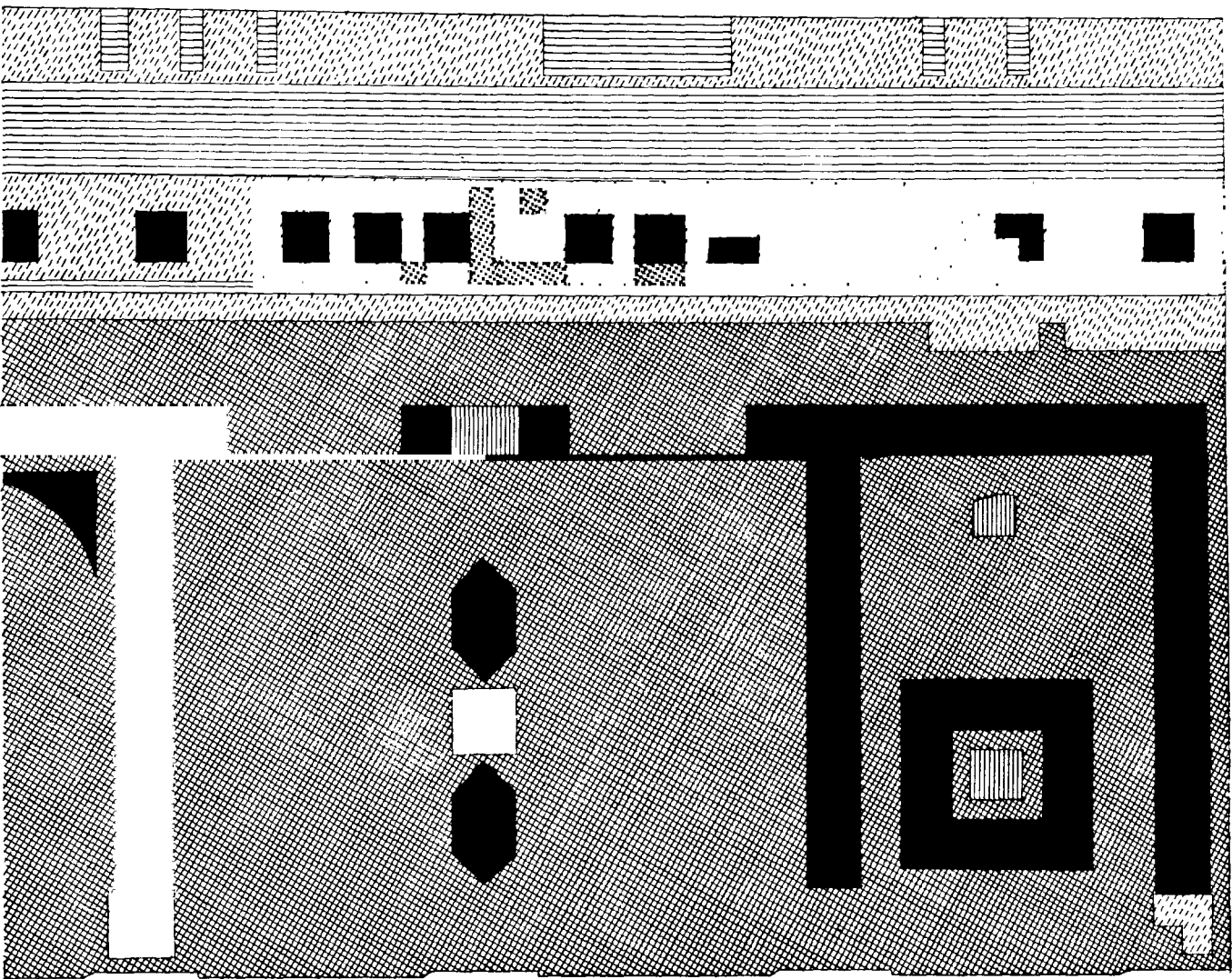


Fig. 53 bis. North-East face of Octagon. Northern half

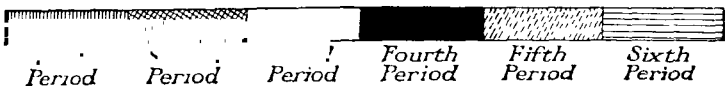


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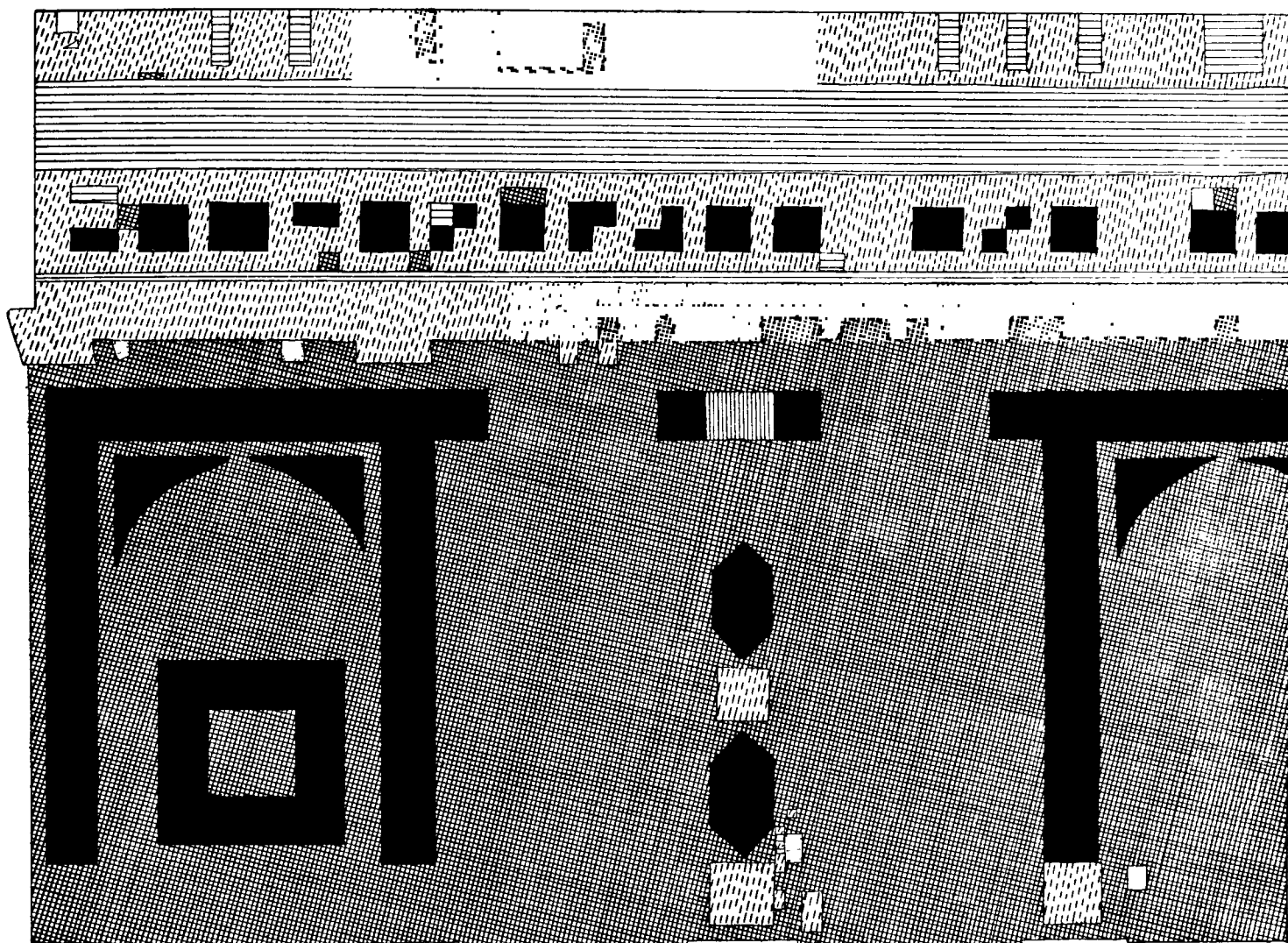


Fig. 54 bis. North-East face of Octagon. Southern half

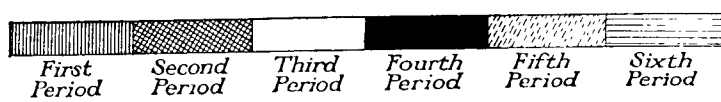


Fig. 54 bis

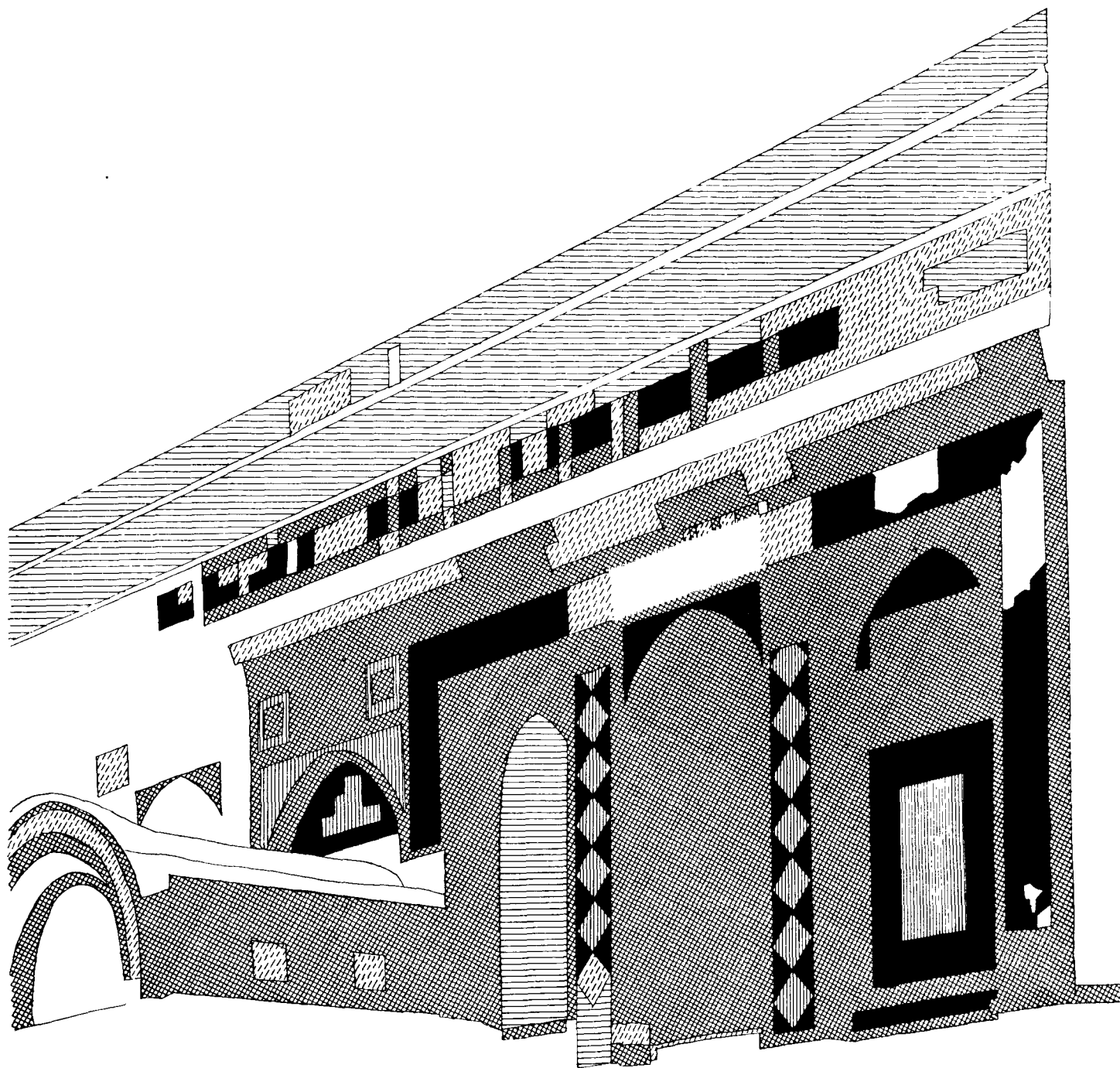


Fig. 55 bis. East face of Octagon. Northern half

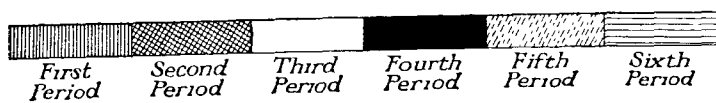


Fig. 55 bis

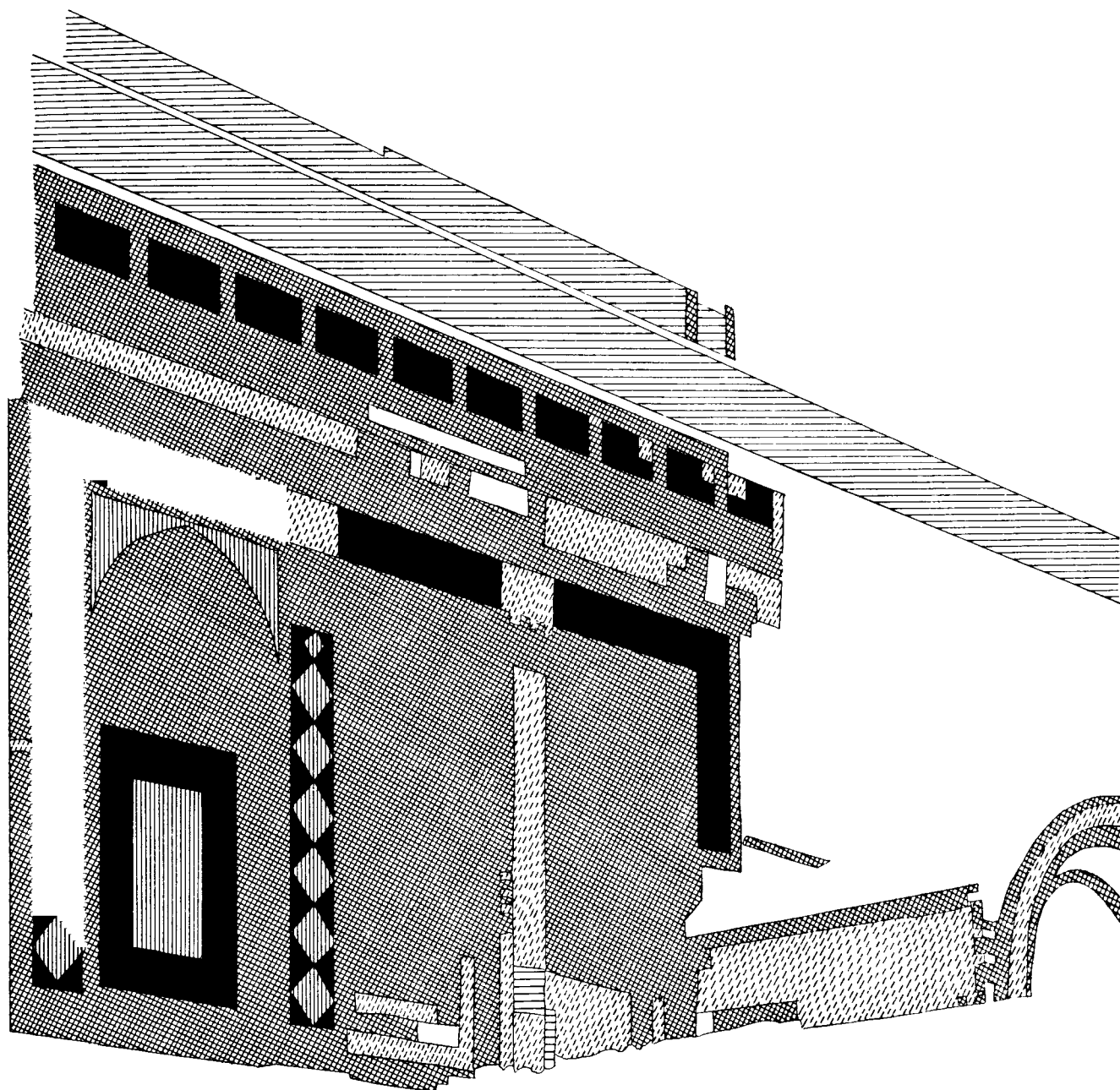


Fig. 56 bis. East face of Octagon. Southern half

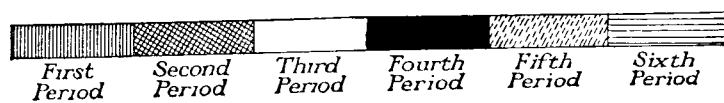


Fig. 56 bis

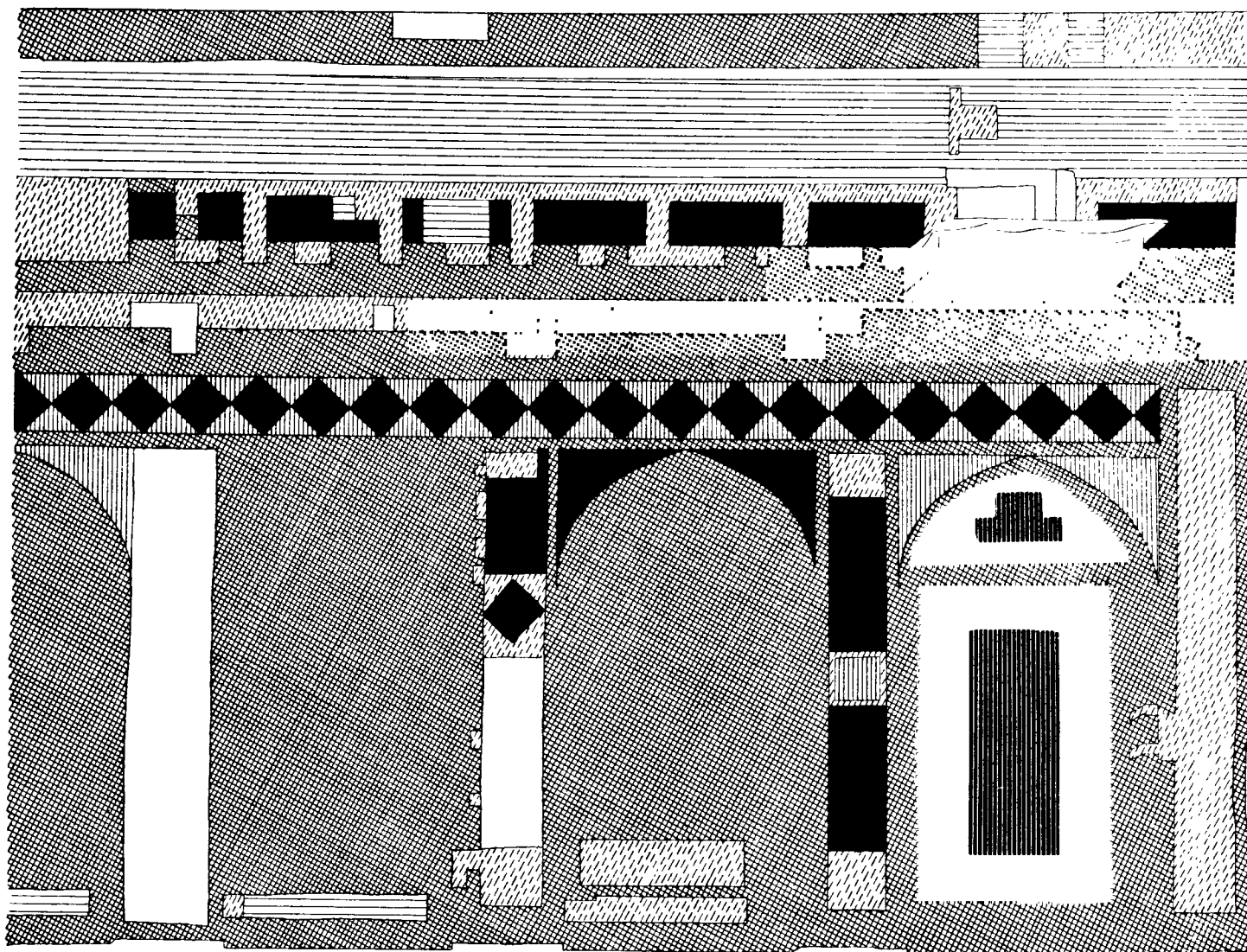


Fig. 57 bis. South-East face of Octagon. Northern half

Fig. 57 bis

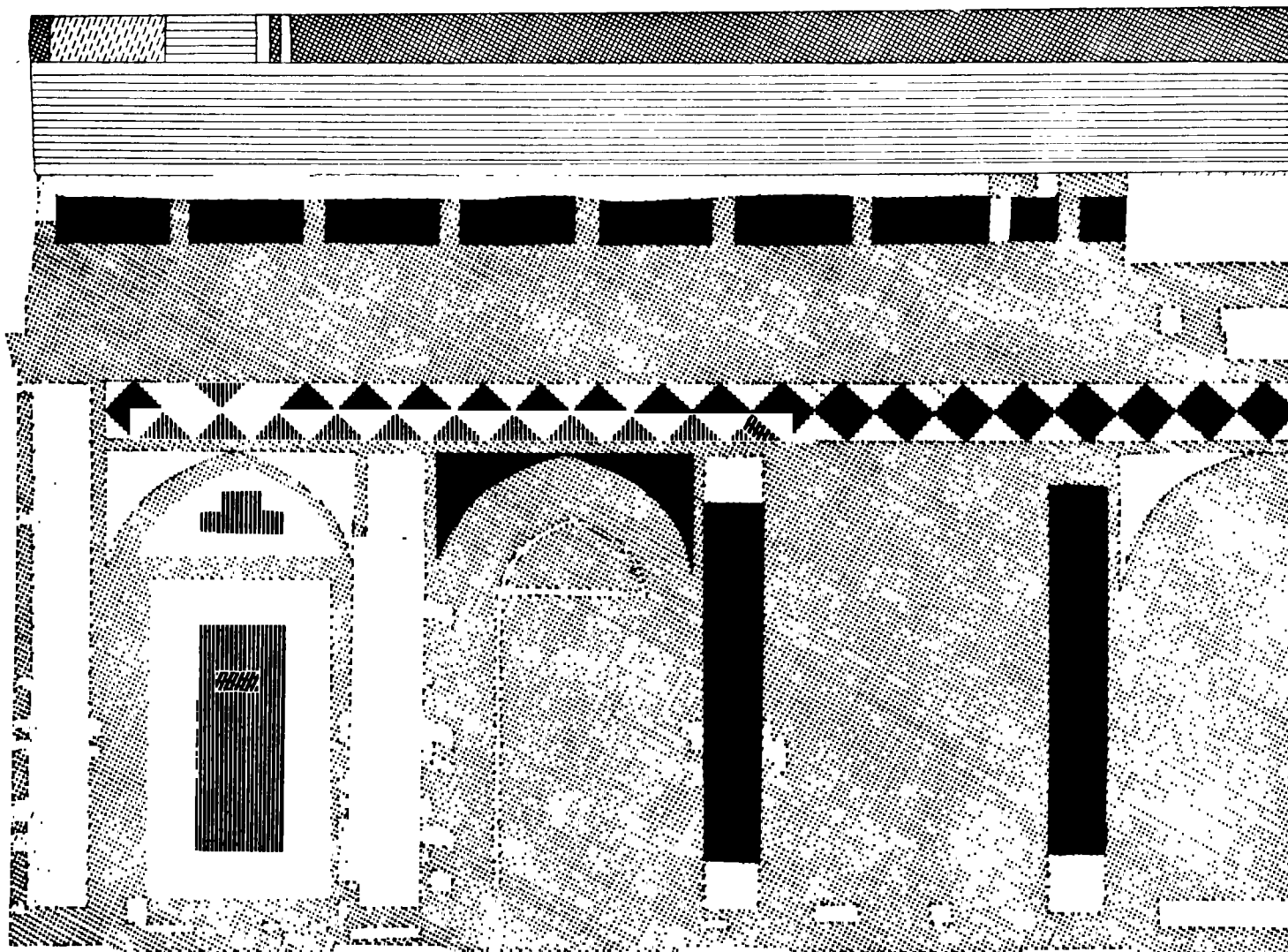


Fig. 58 bis. South-East face of Octagon Southern half

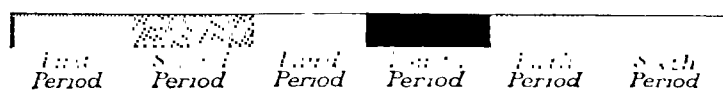


Fig 58 bis

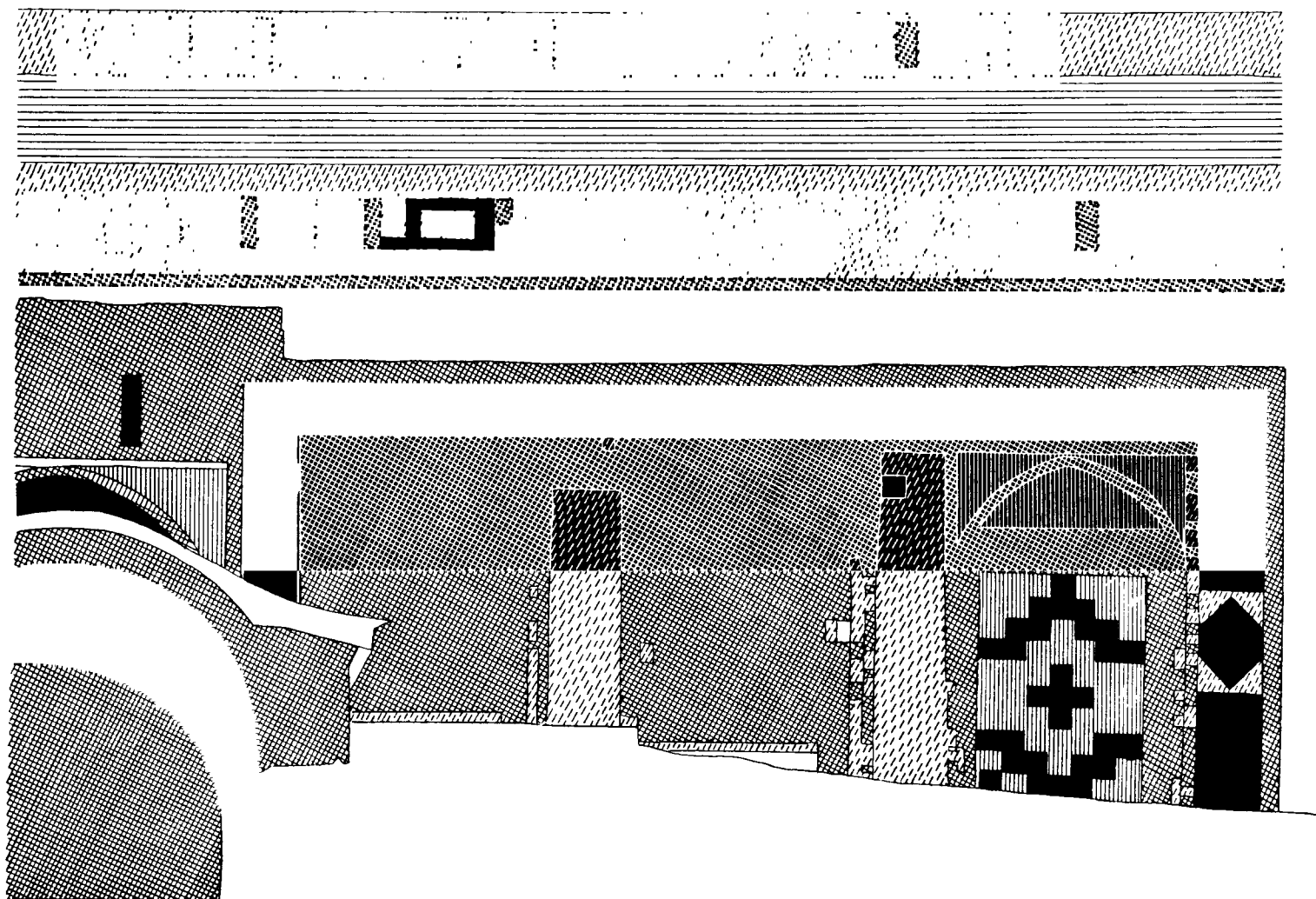


Fig. 59 bis. South face of Octagon. Eastern half

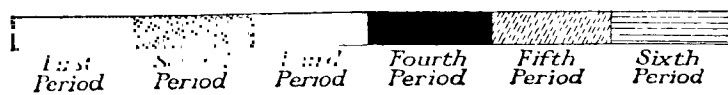


Fig 59 bis

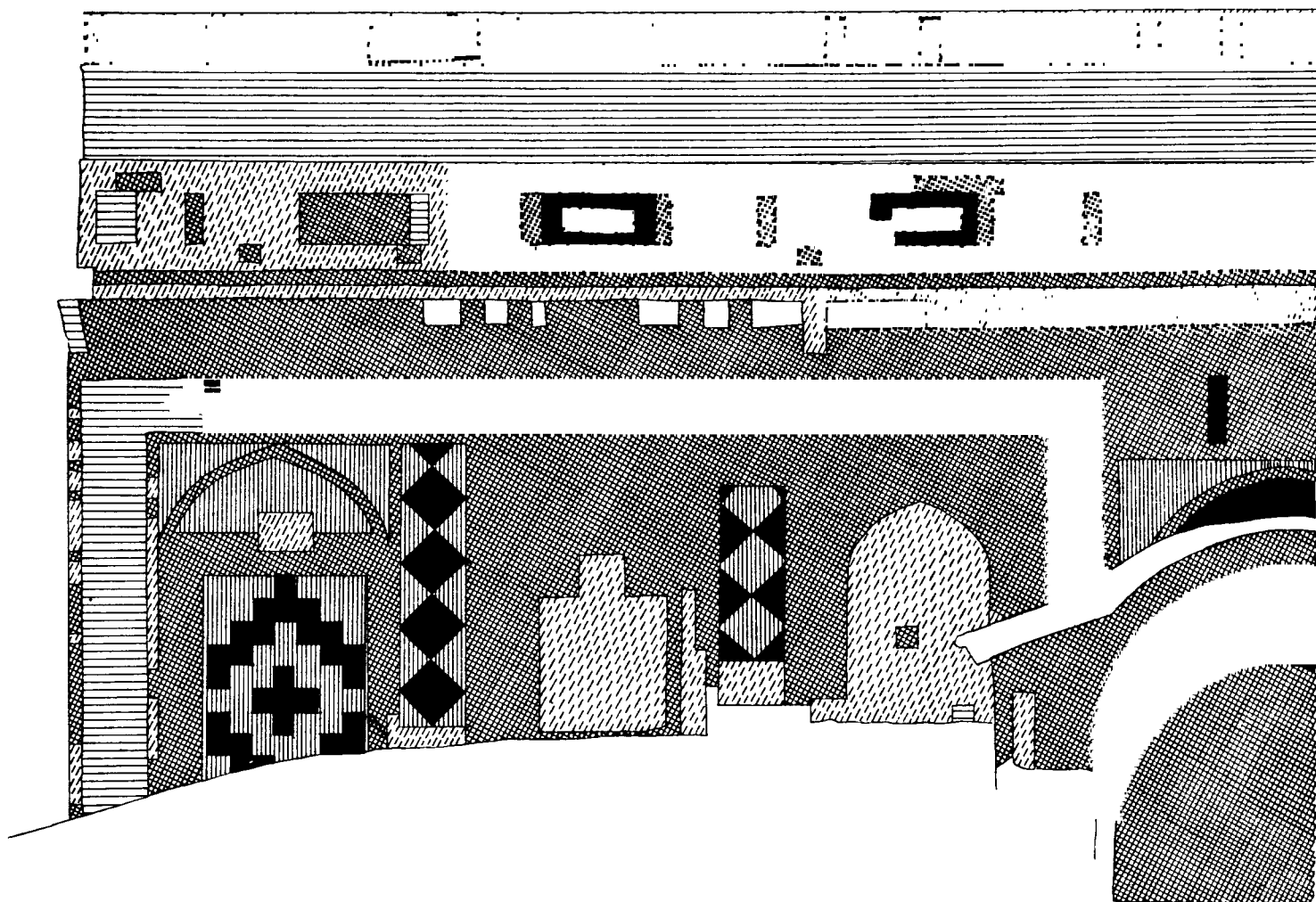


Fig. 60 bis. South face of Octagon. Western half

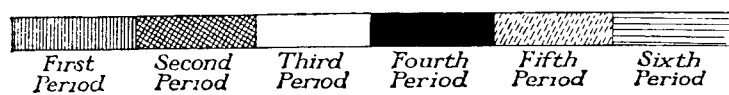


Fig. 6o bis

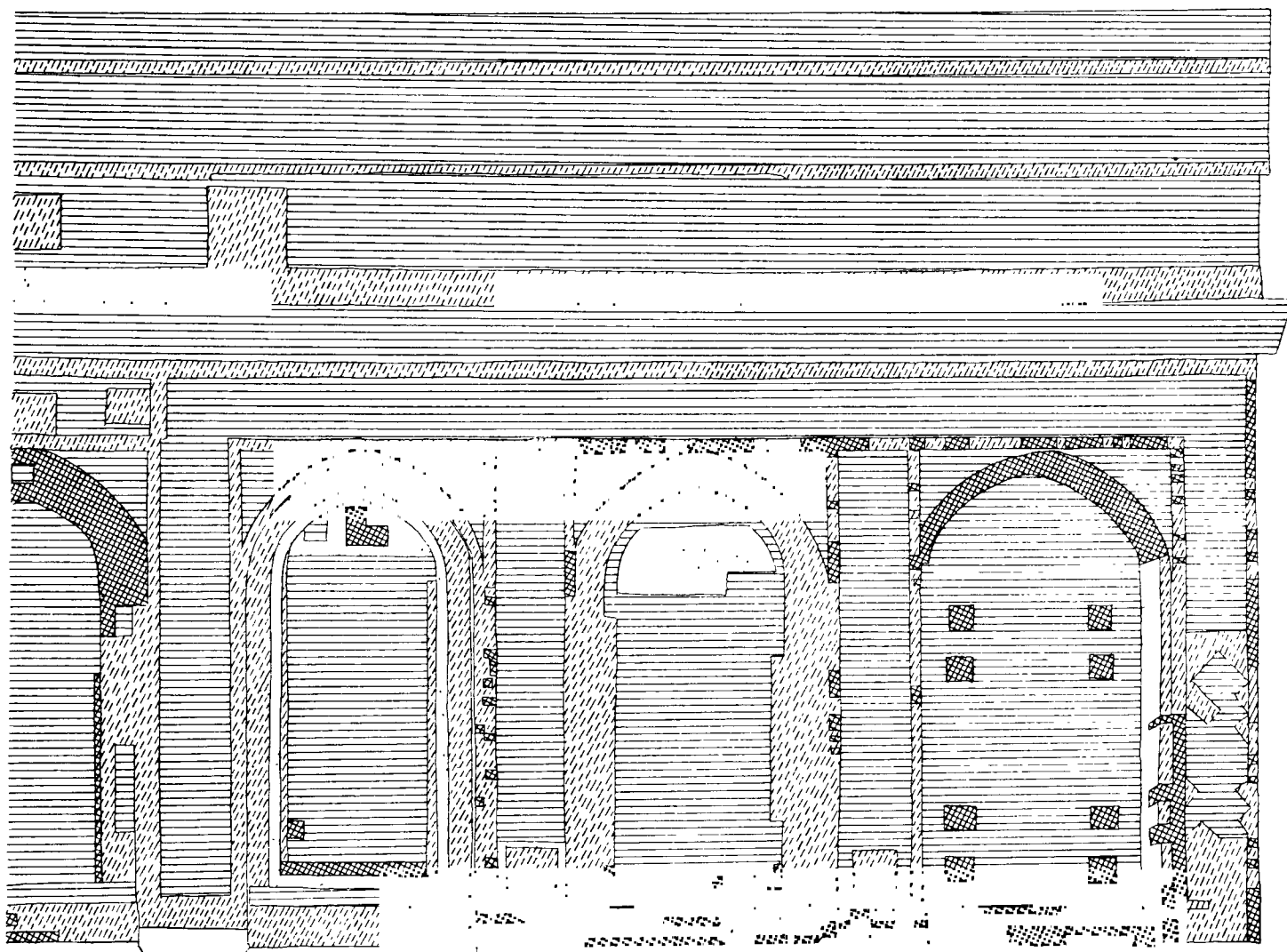


Fig. 61 bis. South-West face of Octagon. Southern half

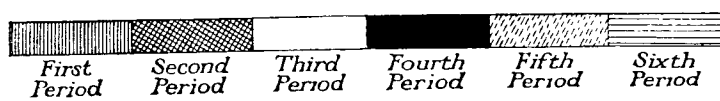


Fig. 61 bis

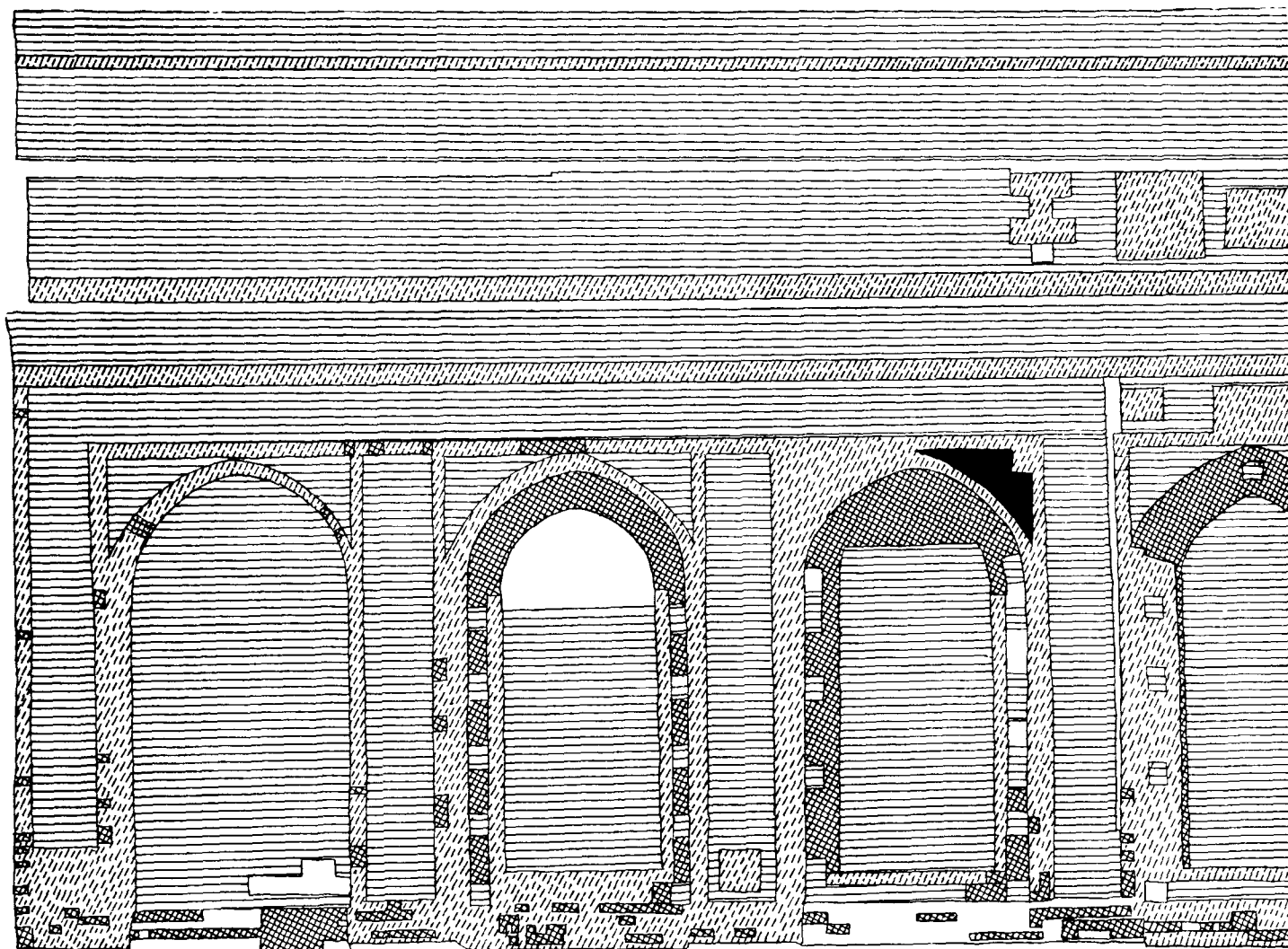


Fig. 62 bis. South West face of Octagon. Northern half

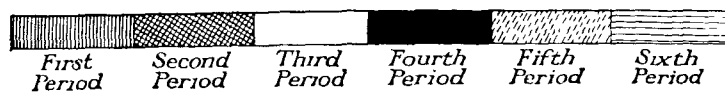


Fig. 62 bis

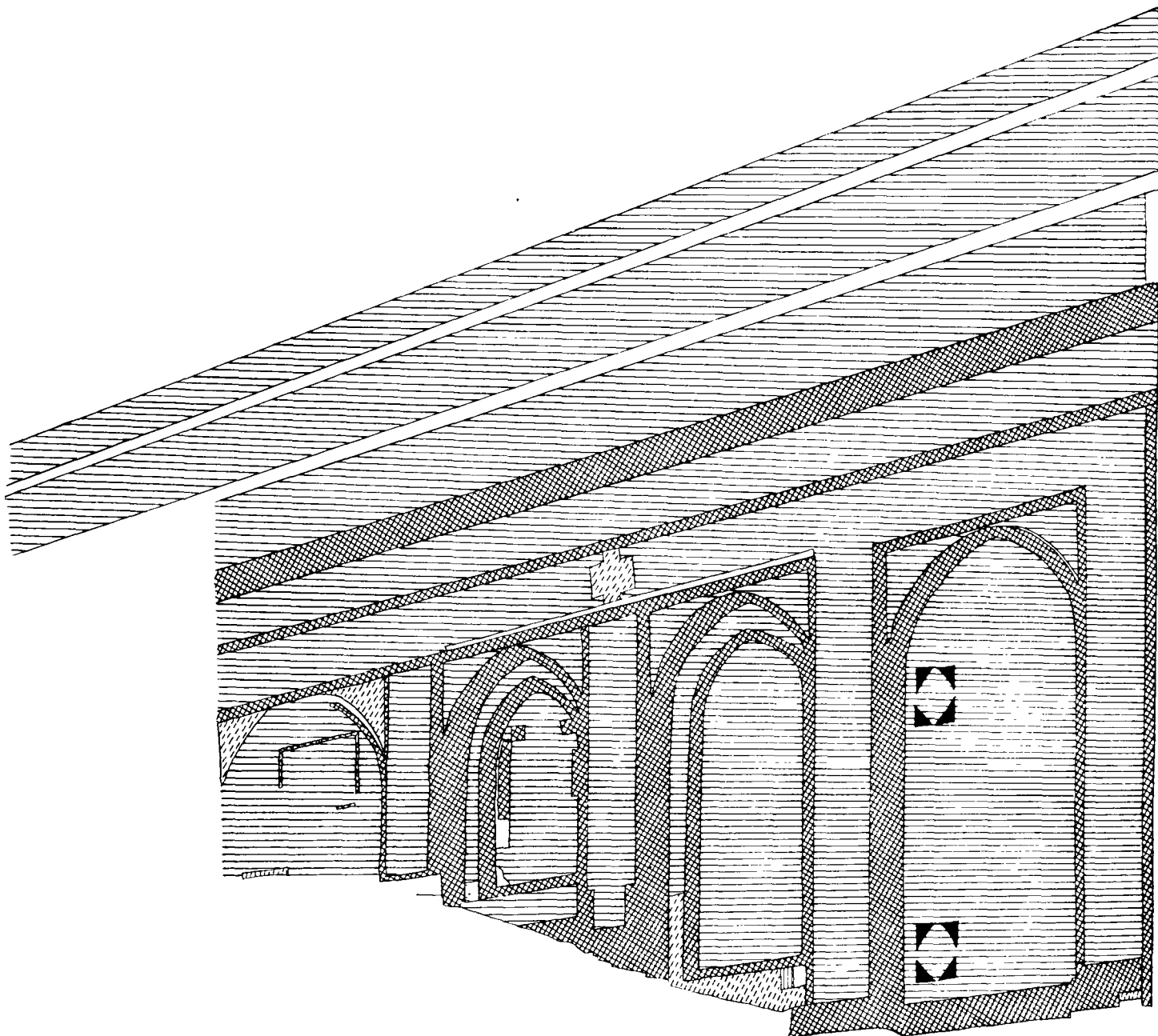


Fig. 63 bis. West face of Octagon. Southern half

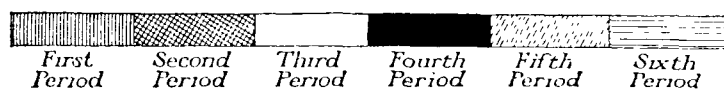


Fig. 63 bis

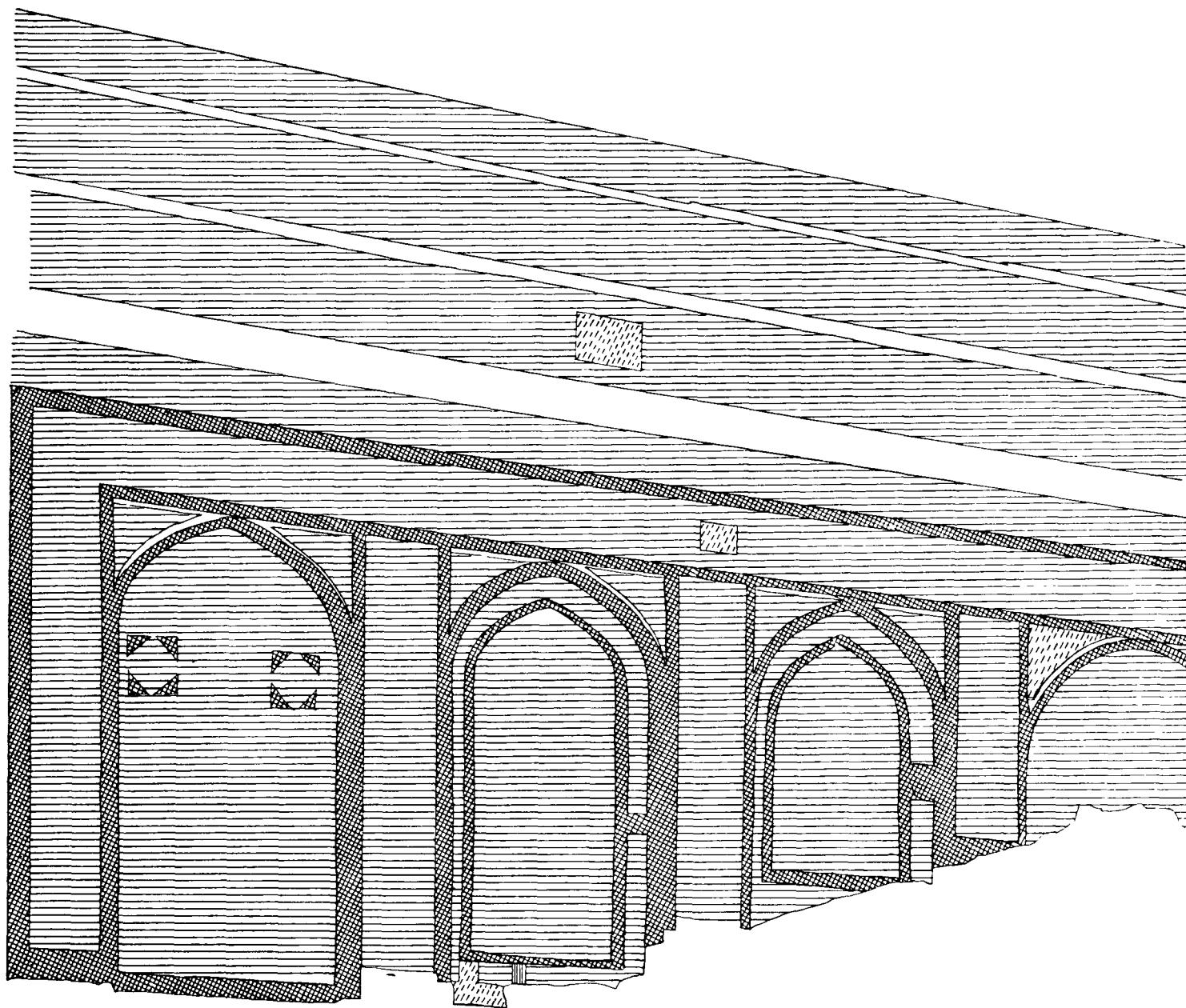


Fig. 64 bis. West face of Octagon. Northern half

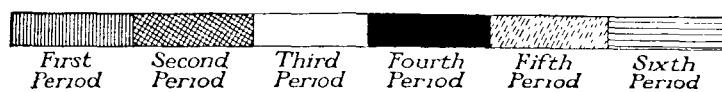


Fig. 64 bis

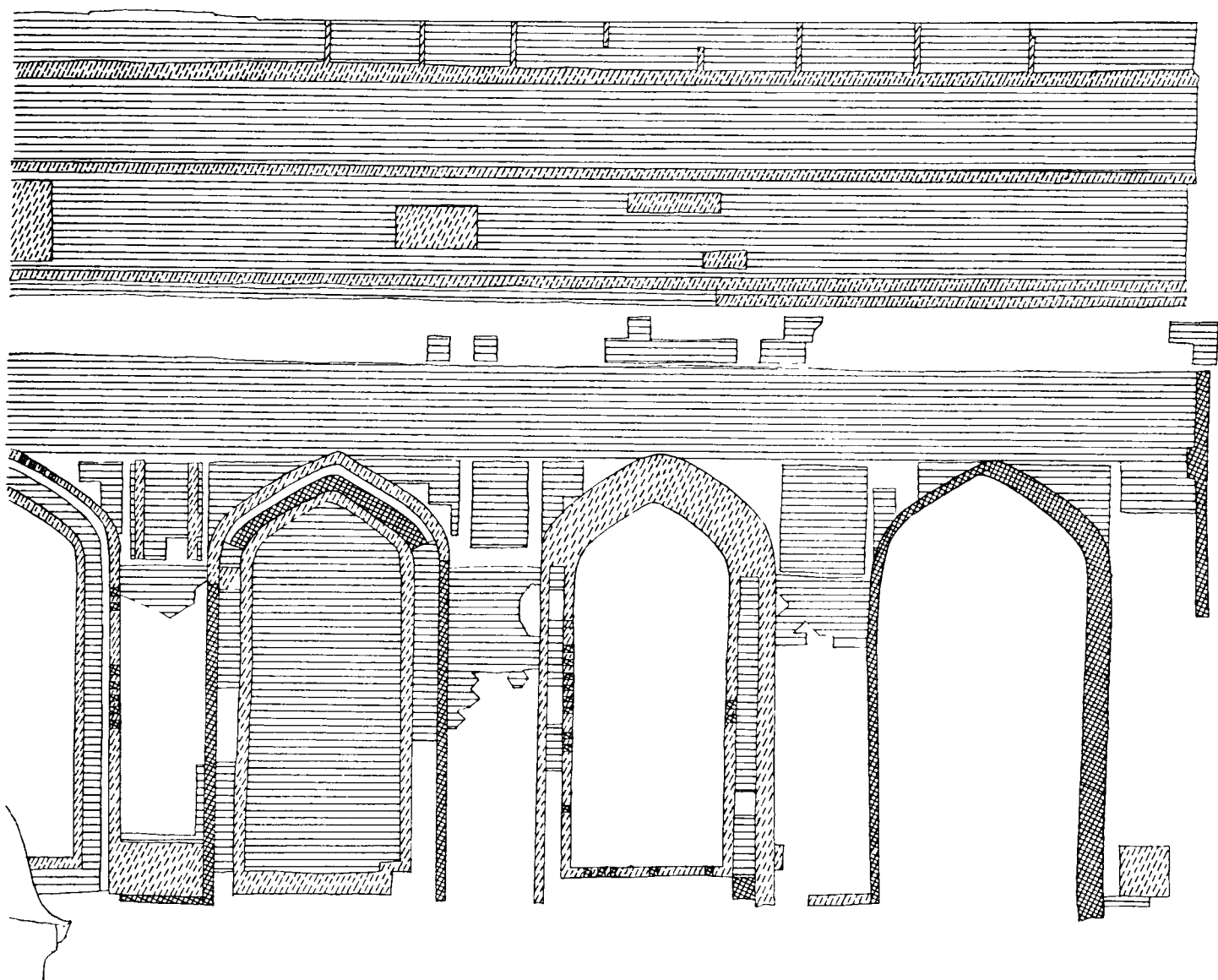


Fig. 65 bis. North-West face of Octagon. Southern half

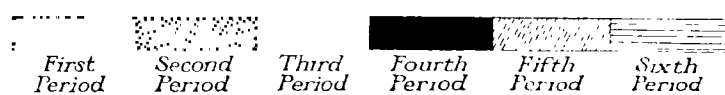


Fig. 65 bis

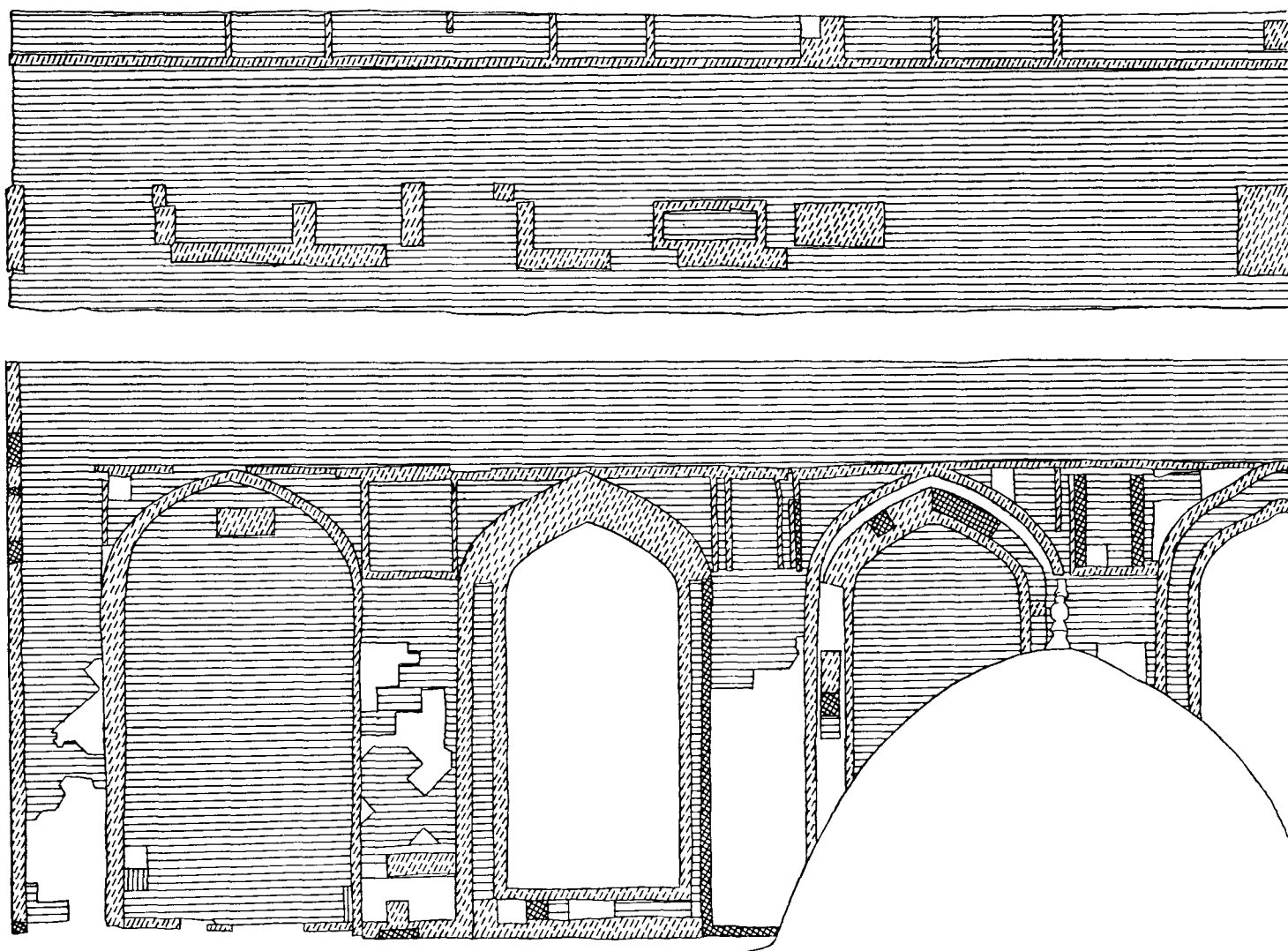


Fig. 66 bis. North-West face of Octagon. Northern half

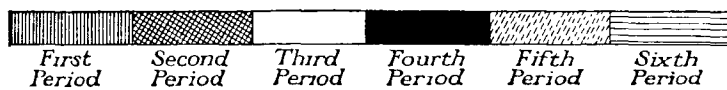


Fig. 66 bis

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